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# *Opuscula Philolichenum*

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## Table of Contents

- Lendemer, James C.  
Preliminary Notes on The Lichen Flora of Lehigh Gorge State Park, Pennsylvania, USA.  
1-8.
- Lendemer, James C.  
Recent Records of Lichens in The Local Area (MD, NJ, PA). I.  
9-20.
- Knudsen, Kerry  
A Preliminary Study of *Acarospora smaragdula* var. *lesdainii* in California.  
21-24.
- Lendemer, James C.  
Lichens of Eastern North America Exsiccati. Fascicle II, nos. 51-100.  
25-40.
- Lendemer, James C.  
Lichens of Eastern North America Exsiccati. Fascicle III, nos. 101-150.  
41-54.
- Harris, Richard C.  
A Preliminary List of the Lichens of New York  
55-74.
- Lendemer, James C.  
*Placynthiella knudsenii* sp. nov., a New Lichen from Western North America  
75-78.
- Index of New Taxa Proposed in Vol. 1.*  
79.

# A Preliminary Checklist of the Lichen Flora of Lehigh Gorge State Park

JAMES C. LENDEMER<sup>1</sup>

**ABSTRACT.** – Recent field work in the Lehigh Gorge, NE Pennsylvania, USA, revealed the presence of 100 lichen species. Of these, 22 have not previously been reported for the state of Pennsylvania and several represent undescribed taxa.

## INTRODUCTION

It is generally understood that the lichen flora of Pennsylvania is one of the most understudied lichen floras in the northeastern United States. Though the lichens of the commonwealth have been under continuous study for over 200 years (Lendemer & Hewitt, 2002) most areas remain unstudied and poorly collected. Several years ago the author began intensive field work in the mid-Atlantic states (primarily NJ and PA) in an effort to better understand the diversity and distribution of lichenized fungi in the region. Such field work is invaluable because New Jersey and Pennsylvania represent one of the few areas that have been continuously under study by lichenologists prior to, during, and following the industrial revolution in eastern North America. Thus, voucher specimens collected 200 years ago can provide baseline data for comparison with later studies.

In September, 2003 the author began field work in conjunction with the floristic studies of T. Block and A. Rhoads to better characterize the vegetation of the area currently defined as Lehigh Gorge State Park (hereafter abbreviated LGSP). LGSP presently includes ca. 4,548 acres of land bordering the Lehigh River mostly in Carbon County, PA (Anonymous, 2002). Geologically speaking, LGSP is of particular interest because the late Pleistocene glacial border divides the park into two distinct units, one that is glaciated and one that is not (Inners, 1998). The presence of this geological feature coupled with the ca. 600 ft. decrease in elevation between the north end of the Lehigh River Gorge (White Haven) and the south end of the gorge (Jim Thorpe) as well as the large diversity of exposed stratigraphic units (including the Mauch Chunk Formation, Pocono Formation, Spechty Kopf Formation, and Catskill Formation (Inners, 1998)) have provided a wide variety of habitats for lichens.

Another factor contributing to lichen diversity within LGSP is the large amount of variation in forest composition and aspect. It should be noted that the vegetation types reported by Anonymous (2002) for LGSP are far from accurate and, oversimplify the diversity of vascular plant community types found within the park. Lower slopes and north/east facing exposures are primarily forested by *Acer rubrum*, *Betula alleghaniensis*, and *Tsuga canadensis* with a dense understory of *Rhododendron maximum*. When *R. maximum* is absent or sparse the understory is usually composed of *Acer spicatum*, *Hamamelis virginiana*, and *Ilex montana*. Such forests can be classified as the northern hardwood type (Fike, 1999). The upper slopes, ridge tops, and south/west facing exposures are mostly forested by several species of *Quercus* (*Q. alba*, *Q. coccinea*, *Q. montana*, *Q. velutina*) with an ericaeuous shrub layer (often with abundant *Kalmia latifolia*).

The composition of the forest in this region changes dramatically from one locality to another depending on elevation and aspect. So much so, that the abundance (and presence) of some lichens species is variable as well. It is significant too, to recognize that there are limited northern conifer forests present both north and south of the glacial boundary, primarily in the small gorges that contain tributaries to the Lehigh River. Also, nearly the entire area within the boundaries of LGSP has been cleared for timber in the past (Anonymous, 2002) and thus, little if any original forest is still present.

## MATERIALS AND METHODS

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The checklist presented here is based primarily on specimens collected on several trips to LGSP in fall 2003 by the author and A. Rhoads. One trip to Drakes Creek Gorge was made by the author and M. Moody on 21.October.2003. And, several collections made previously at Glen Onoko in early 2003 by the author, M. Moody, and L.H. Smith are also included.

Because of the size of LGSP it would have been impossible to explore the entire park on foot in the time allotted for this study. Thus instead, intensive field work was undertaken in smaller areas that were likely to provide the most habitat diversity for lichen species. Each such study location is listed here with notes on the habitats present at the location. In addition to field work in limited areas, several general collection trips were made throughout the park by motor vehicle. Such “general” trips were intended to locate areas of lichenological interest for future study and, to better assess the lichen diversity in the park as a whole.

A small portion of the extensive grasslands on bluffs overlooking the east shore of the Lehigh River between Lehigh Tannery and Rockport were studied as well. Though this area technically falls within the political boundaries of Hickory Run State Park the collections are included in thus study because the grasslands clearly form part of the Lehigh River Gorge and natural features do not necessarily obey political boundaries. The boundary between Hickory Run State Park and LGSP actually divides the grasslands in two, and a search of the habitat within LGSP would likely reveal a similar assemblage of species.

**Drakes Creek Gorge, Carbon Co. (DCG)** – Drakes Creek is a small tributary to the Lehigh River and is located on the east side of the Lehigh River Gorge ca. 13 miles south of White Haven. There was previously a saw-mill present near the mouth of the creek (Anonymous, 1873) the foundations of which are still present. And, a small abandoned road meets the creek ca. ¾ mile upstream from the mouth of the creek. The forest in the lower portions of the gorge is composed of primarily of birches (*Betula* spp.) and red maple (*Acer rubrum*) with sparse striped maple (*A. pensylvanicum*), witch-hazel (*Hamamelis*), and small conifers (*Abies*). Farther upstream there are dense thickets of *Rhododendron* which crowd out most of the smaller trees that are seen near the mouth of the creek. The north slope of the gorge is forested primarily by small birches and maples with extensive exposures of the Pocono Formation. The plateau at the top of the gorge includes a high elevation forest of birch and *Rhododendron* with extensive meadows with sparse large trees (mostly *Quercus* and *A. rubrum*) and a low ericaceous understory.

**Glen Onoko, Carbon Co. (GO)** – A number of trips were made to this locality previous to this study (mainly by Lendemer & Moody and Lendemer & Smith in 2003). The locality is well known for the spectacular waterfalls in the Glen Onoko Gorge and is visited by many day-hikers. Of the localities visited for this study Glen Onoko likely represents that which has experienced to most impact due to *recent* human activities (mainly hiking). The lower slopes of the gorge are nearly devoid of foliose or fruticose lichens and this is likely due to both the large number of visitors and the constant spray of water from the waterfalls and stream. There are abundant crustose species, mostly *Porpidia albocaerulescens*, and *Rhizocarpon* spp. As the elevation increases however, the number of hikers decreases (as does the amount of water) and the boulders show increasing amounts of lichen growth. (This is also likely due to the decrease of actual flowing water and the increase of water in the form of mist and fog.) The saxicolous lichen flora in this area is primarily composed of *Aspicilia* spp., *Flavoparmelia baltimorensis*, *Parmelia neodiscordans*, *Parmelia sulcata*, *Xanthoparmelia conspersa*, and *X. plittii*. The forested upper slopes with abundant large boulders also host large colonies of the Umbilicariaceae species, *Lasallia papulosa*, *Umbilicaria mammulata*, and a single small colony of *Umbilicaria muhlenbergii* (a species which is oddly rare in the region).

**Hickory Run State Park (grasslands along east shore of Lehigh River, north of mouth of Hickory Run), Carbon Co. (HRSPII)** – The bluffs along the east shore of the Lehigh River contain extensive grasslands for nearly the entire distance between Lehigh Tannery and ca. 1 mile south of Hickory Run. Though likely originally a result of fire the grasslands are apparently maintained by the large population of deer in the area which browse young trees and shrubs to the extent that few if any mature to full size. The grasslands also have a rich peaty soil overlaying the bedrock (Lehigh Formation mostly) which allows for a large amount of bryophyte and fruticose lichen (i.e. *Cladonia* spp.) growth. The sparse trees that are present (mainly *Populus grandidentata*) also host a number of lichen species that were not observed elsewhere in the park. Geologically, the exposed rock is of particular interest because the grasslands just north of Hickory Run seem to be the actual limit of glaciation, and the rock exposures contain enough calcium to support the growth of lichens more typical of calcareous substrates. It is interesting to note that though there is abundant *Cladonia* and other suitable substrates, there seem to be few if any lignicolous or muscicolous lichens present at this locality.

Lehigh Gorge Bicycle Trail – Sparse collections were made at a number of localities along the trail. The trail is broken down into the following segments: White Haven to Lehigh Tannery, Luzerne Co. (LH); Lehigh Tannery to Rockport, Luzerne Co. (LHII); Rockport to Glen Onoko, Carbon Co. (LHIII).

Mud Run Gorge, Carbon Co. (MRG) – Mud Run Gorge extends a great distance further than most of the other gorges in LGSP and as a result is included partly within Hickory Run State Park, LGSP, and State Game Lands. (A large portion is also privately owned.) Because portions of the gorge were nearly impassable on foot only the area near the headwaters was explored during this study. The portion of the gorge in Hickory Run State Park was visited in May, 2003 and the lichens vouchered. The diversity of lichens in Mud Run Gorge seems to be significantly less than that of Drakes Creek Gorge which is similar in aspect but, slightly smaller with more steeply sloping sides. The forest composition of the two gorges is nearly identical.

Penn Haven Junction, Carbon Co. (PHJ) – There was once a complex of structures at Penn Haven Junction where coal was loaded onto trains for transportation south (Anonymous, 1873). Though comparatively little time was spent at this locality a number of the lichens represent interesting records and additions to the park. The forest is composed primarily of sparse red maple (*Acer rubrum*) and oaks (*Quercus*). Too, the ruined foundations provided a viable substrate for several species typical of acid soil and disturbance based habitats (i.e. *Cladonia grayi*, and *Placynthiella oligotropha*).

Sandy Run Gorge, Luzerne Co. (SRG) – This was the only study location above the glacial boundary. The gorge itself is considerably shallower than the others included in this study and the bottom much wider (allowing for extensive areas to be occasionally flooded). The upper slope of the gorge is forested by a typical northern-hardwood assemblage with occasional conifers and abundant *Rhododendron*. The parts of the gorge which are occasionally flooded are forested with sparse conifers and typical disturbance based trees (i.e. *Crataegus*).

#### ANNOTATED CHECKLIST

This checklist is arranged alphabetically by genus and species and includes all of the specimens collected by the author in LGSP. The collection numbers given are those of the author (J.C. Lendemer) and follow the locality abbreviation given in the section above. Specimens determined only to genus are included as are specimens representing undescribed taxa. Sterile sorediate crusts are included within the list when the specimens could be named. Sterile crusts that could not be named are included at the end of the list and are grouped by chemistry (when TLC was performed). It should be noted that an effort was not made to sample lichenicolous fungi and thus, only a single taxon, *Abrothallus caerulescens* Kotte, is included here.

All taxa reported here are based on voucher specimens collected by the author and deposited in the herbarium of the author (hb. Lendemer), with many duplicates in the herbarium of the New York Botanical Garden (NY). Though an effort was made to collect every species seen at each locality the collections are far from complete and further field work would likely result in additional records from some localities. Too, moribund and sterile collections of common species which are normally fertile were discarded and thus certain species which are present at most localities may not be fully represented on the list. The nomenclature presented here generally follows Esslinger (1997) however, cases where the nomenclature (or taxonomy) differs are a result of the preferences of the author.

*Abrothallus caerulescens* Kotte – HRSP II, 1591 (on *Xanthoparmelia* sp.).

*Acarospora* sp. – LHII, 1656.

No name has yet been found for this material, however, it seems likely that one exists amid the sea of taxa named by Magnusson and others. The species grows on concrete and mortar, and can be recognized by the gray areolate thallus, with immersed purple-red apothecia, and simple, colorless, ellipsoid spores ca. 4 $\mu$ m x 2 $\mu$ m (many per ascus). The same taxon was reported from New Jersey, USA as *Acarospora* sp. by Lendemer (in press.)

*Acarospora fuscata* (Schrader) Arnold – MRG, 1492.

This species is common throughout the park. All of the collections made during this study, with the exception of that cited above were sterile and discarded.

*Agonimia* sp. – HRSP II, Lendemer 1612 (musciculous, sterile).

*Arthonia caesia* (Flotow) Körber – HRSP II, 1563.

*Aspicilia* sp. – HRSP II, 1584.

Saxicolous species of *Aspicilia* are abundant throughout the park and present at nearly every locality. Most collections were sterile however, and discarded. The collection reported here contains norstictic acid (by application of KOH).

*Aspicilia laevata* (Acharius) Arnold - MRG, 1491.

*Biatora longispora* (Degelius) Lendemer & Printzen - DCG, 1290, 1291, 1292.

*Caloplaca subsoluta* (Nylander) Zahlbruckner - HRSPPII, 1652.

*Candelariella efflorescens* R.C. Harris & W.R. Buck - HRSPPII, 1569.

Sterile sorediate thalli of *Candelariella* were often encountered during field work, they were not collected however because there is a possibility that *C. reflexa* (Nylander) Lettau (which differs only in spore number) is also present. Thus, only fertile material can be determined with confidence.

*Candelariella vitellina* (Hoffmann) Müll. Arg. - HRSPPII, 1585.

*Chaenothecopsis savonica* (Räsänen) Tibell - PHJ, 1462.

*Chrismofulvea dialyta* (Nylander) Marbach - DCG, 1295, 1463; MRG, 884, 885; SRG, 1593.

*Cladonia atlantica* A. Evans - LH, 1278.

*Cladonia caespiticia* (Persoon) Flörke - DCG, 1281, 1499.

*Cladonia cristatella* Tuckerman - HRSPPII, 1544.

*Cladonia grayi* G. Merrill ex Sandstede - DCG, 1202; GO, 484; HRSPPII, 1543; LH, 1276.

*Cladonia incrassata* Flörke - DCG, 1664.

*Cladonia macilenta* Hoffmann - HRSPPII, 1550.

*Cladonia parasitica* (Hoffmann) Hoffmann - GO, 485.

*Cladonia piedmontensis* G. Merrill - HRSPPII, 1551.

*Cladonia polycarpoides* Nylander - HRSPPII, 1549.

It is likely that the record of *C. symphycarpia* (Flörke) Fries, for Pennsylvania cited by McGrath (1991) belongs here. The distribution map for this species provided by Brodo et al. (2001) does not include Pennsylvania within the range of *C. symphycarpia*.

*Cladonia rangiferina* (L.) Wigg. - DCG, 1427; LH, 1270.

*Cladonia rei* Schaefer - HRSPPII, 1547.

*Cladonia squamosa* Hoffmann - DCG, 1426.

*Cladonia strepsilis* (Acharius) Grognot - HRSPPII, 1548.

*Dibaeis baeomyces* (L.) Rambold & Hertel - DCG, 1277; GO, 482; HRSPPII, 1545.

*Dictyocatenulata alba* Finley & Morris - DCG, 1425.

*Dimelaena oreina* (Acharius) Norman - DCG, 1475.

*Dimerella pineti* (Acharius) Vèzda - DCG, 1301, 1501; MRG, 847; SRG, 1518.

*Diploschistes muscorum* (Scopoli) Santesson - LH, 1294.

*Endocarpon* sp. - LHII, 1502.

*Flavoparmelia baltimorensis* (Gyelnik & Fóriss) Hale - MRG, 840, 1503; HRSPPII, 1571.

*Flavoparmelia caperata* (L.) Hale - DCG, 1258 (saxicolous); GO, 662.

*Flavopunctelia flaventior* (Stirton) Hale - HRSPPII, 1559.

*Flavopunctelia soredica* (Nylander) Hale - MRG, 1497.

*Fuscidea* sp.(?) - HRSPPII, 1578. (TLC: unkown (perlatolic acid goup??))

*Fuscidea arboricola* Coppins & Tønsberg - HRSPPII, 1582.

*Hypocenomyce scalaris* (Acharius) Choisy - MRG, 1498; HRSPPII, 1575.

*Hypogymnia physodes* (L.) Nylander - MRG, 863.

*Ionaspis lacustris* (With.) Lutzoni - MRG, 860.

*Lasallia papulosa* (Acharius) Llano - GO, 479.

*Lecanora* sp. (?) - DCG, 1275, 1508. (TLC: atranorin, zeorin).

*Lecanora dispersa* (Persoon) Sommerfelt - HRSPPII, 1567.

*Lecanora strobilina* (Sprengel) Kieffer - DCG, 1428; MRG, 845.

*Lecanora symmicta* (Acharius) Acharius - HRSPPII, 1565.

*Lecanora thysanophora* R.C. Harris - SRG, 1595.

*Lepraria* sp. 1 - HRSPPII, 1577.

*Lepraria* sp. 2 - SRG, 1592 (TLC: atranorin, zeorin).

*Lepraria* sp. 3 - DCG, 1288 (TLC: atranorin, fatty acid, protocetraric acid).

*Lepraria lobificans* Nylander - DCG, 1581, 1604, 1606.

*Lepraria neglecta* (Nylander) Erichsen s. lat. - DCG, 1512 (corticulous).

*Loxospora pustulata* (Brodo & W.L. Culberson) R.C. Harris - GO, 663.

*Melanelia subaurifera* (Nylander) Esslinger - DCG, 1286; HRSPPII, 1561.

*Micarea erratica* (Körber) Hertel - MRG, 1514.

*Micarea peliocarpa* (Anzi) Coppins & R. Santesson - DCG, 1299, 1305; LHII, 1467, LHIII, 1520.

*Myelochroa aurulenta* (Tuckerman) Elix & Hale – SRG, 1519.  
*Myxobilimbia sabuletorum* (Schreber) Hafellner – DCG, 1298.  
*Ochrolechia arborea* (Kreyer) Almborn – DCG, 1272, 1273, 1274; MRG, 1506, 1510; HRSPPII, 1573.  
*Parmelia neodiscordans* Hale – GO, 661; MRG, 841, 844.

See Lendemer (in press.) for other records from Pennsylvania for this species.  
*Parmelia squarrosa* Hale – MRG, 842.  
*Parmelia sulcata* Taylor – GO, 487; HRSPPII, 1560.  
*Parmelinopsis minarum* (Vainio) Elix & Hale – HRSPPII, 1558.  
*Phaeophyscia adiastola* (Esslinger) Esslinger – HRSPPII, 1576.  
*Phaeophyscia cernohorskyi* (Nádvorník) Esslinger – LHII, 1588.  
*Phaeophyscia rubropulchra* (Degelius) Esslinger – DCG, 1284; LHII, 1482, 1655; MRG, 843, 1505; SRG, 1495, 1516.  
*Physcia adscendens* (Fries) Oliver – HRSPPII, 1554, 1570.  
*Physcia millegrana* Degelius – MRG, 1494.  
*Physcia subtilis* Degelius – DCG, 1257; MRG, 1513.  
*Placynthiella oligotropha* (J.R. Laundon) Coppins & P. James – PHJ, 1460.  
*Polysporina simplex* (Davies) Vězda – HRSPPII, 1586, 1587.

Lendemer 1587 is partially lichenicolous on *Acarospora fuscata*, the saxicolous and lichenicolous ascomata do not differ in spore size.

*Porpidia albocaerulescens* (Wulfen) Hertel & Knoph – MRG, 862.  
*Porpidia albocaerulescens* (?) sorediate morph – DCG, 1306.  
*Porpidia tahawasiana* Gowan – DCG, 1304.  
*Punctelia rufecta* (Acharius) Krog – SRG, 1515.  
*Punctelia subrudecta* auct. Amer. – DCG, 1287; MRG, 1496; HRSPPII, 1574.

Further study is clearly needed before the synonymy proposed by Aprtoot (2002) of *P. subrudecta* auct. Amer. with *P. perreticulata* (Räsänen) Wilhelm & Ladd is taken up. I have distributed a collection of typical *P. subrudecta* auct. Amer. from New Jersey as *Lichens of Eastern North America Exsiccati, III: 149*  
*Pycnothelia papillaria* Dufour – GO, 483; HRSPPII, 1546.

*Rhizocarpon infernulum* (Nylander) Lynge f. *sylvaticum* Fryday – DCG, 1303.  
*Rhizocarpon reductum* Th. Fries – MRG, 1489, 1493; LHIII, 1490.  
*Rhizocarpon rubescens* Th. Fries – HRSPPII, 1568.

*Rinodina* sp. – PHJ, 1461p.p.

This species was found associated with *R. efflorescens*, unfortunately the specimen is poorly developed and little material was available for study. The species has spores of the Pachysporaria-type, a minutely bullate thallus, and appears to contain atranorin crystals in the cortex but this substance was not found by TLC (J.W. Sheard pers. comm.).

*Rinodina degeliana* Coppins – DCG, 1296. (TLC: atranorin, zeorin).  
*Rinodina efflorescens* Malme – PHJ, 1461p.p.  
*Rinodina metaboliza* Vainio – HRSPPII, 1564, 1566.  
*Scoliciosporum chlorococcum* (Stenhammar) Vezda – PHJ, 1466.  
*Scoliciosporum umbrinum* (Acharius) Arnold – DCG, 1300; HRSPPII, 1650.  
*Trapeliopsis* sp.(?) – HRSPPII, 1579 (TLC: gyrophoric acid?).

This collection was found on rock and possibly represents a sorediate species of *Trapeliopsis*.  
*Trapeliopsis flexuosa* (Fries) Coppins & P. James – HRSPPII, 1572.

*Trapeliopsis granulosa* (Hoffmann) Lumbsch – HRSPPII, 1562.  
*Trapeliopsis viridescens* (Schrader) Coppins & P. James – DCG, 1663.  
*Umbilicaria mammulata* (Acharius) Tuckerman – GO, 480.  
*Umbilicaria muhlenbergii* (Acharius) Tuckerman – GO, 489.

*Verrucaria* sp. – DCG, 1293.

The species was found growing on cement ( $HCl+$ ) and is characterized by a superficial gray-white thallus, with perithecia ca.  $\frac{1}{4}$  to  $\frac{1}{3}$  immersed, involucellum absent below and reaching the base of the hymenium, and spores  $20\mu m \times 10-11\mu m$ .

*Verrucaria calkinsiana* Servít – DCG, 1302.  
*Xanthoparmelia* sp. – HRSPPII, 1580, 1651.  
*Xanthoparmelia conspersa* (Ehrhart ex Acharius) Hale – DCG, 1279, 1280, 1282, 1283; GO, 479; HRSPPII, 1653; MRG, 848, 1504.  
*Xanthoparmelia cumberlandia* (Gyelnik) Hale – HRSPPII, 1580.  
*Xanthoparmelia plittii* (Gyelnik) Hale – HRSPPII, 1583.  
sterile sorediate crustose spp. (TLC not performed) – DCG, 1306; HRSPPII, 1578, 1579, 1581.

sterile sorediate crustose sp. 2 – DCG, 1285, 1607, 1609. (TLC: perlatolic group unkown)

This species has also been found in New Jersey (*Lendemer & Moody* 1214, hb. Lendemer) and West Virginia (*Lendemer & Moody* 873, hb. Lendemer).

## DISCUSSION

The present checklist of lichenized fungi (and non-lichenized fungi often treated with lichens) includes 100 taxa. This is a significant increase from the three taxa previously reported from LGSP by Anonymous (2002) and the scattered collections from adjacent areas reported by McGrath (1991). It is important to note however, that comparatively little of the park was intensively surveyed and, continued searching would likely result in a number of additions to flora. Despite this, several conclusions can be drawn from the data collected during this study.

Of the taxa reported here, 25 represent the foliose growth habit, 61 represent the crustose growth habit, and 14 represent a fruticose growth habit (i.e. *Usnea*). Thus, it is clear that much of the actual species diversity consists of crustose species. At most localities however, foliose lichens (namely *Flavoparmelia*, *Punctelia*, and *Xanthoparmelia*) clearly form the bulk of the lichen bio-mass. It is interesting to note that no corticolous fruticose lichens (specifically *Ramalina* and *Usnea*) were found during this survey. Historical records of these genera exist from throughout Pennsylvania (especially at PH) however they are nearly (if not completely) impossible to find in the same areas today. This is hardly surprising however as these genera appear to have been nearly extirpated from Pennsylvania during the last century as a result of heavy deforestation and industrialization.

The following taxa are reported for the first time from Carbon (C) or Luzerne (L) counties (i.e. were not reported by McGrath 1991) as a result of this study: *Abrothallus caerulescens* (C), *Acarospora fuscata* (C), *Allocetraria oakesiana* (C), *Arthonia caesia* (C), *Aspicilia laevata* (C), *Biatora longispora* (C), *Caloplaca subsoluta* (C), *Candelariella efflorescens* (C), *C. vitellina* (C), *Chaenothecopsis savonica* (C), *Chrismofulvea dialyta* (C, L), *Cladonia atlantica* (L), *C. caespiticia* (C), *C. cristatella* (C), *C. grayi* (C), *C. macilenta* (C), *C. parasitica* (C), *C. peziziformis* (C), *C. rangiferina* (C, L), *C. rei* (C), *C. squamosa* (C), *C. strepsilis* (C), *C. symphyccarpia* (C), *Dibaeis baeomyces* (C), *Dictyocatenulata alba* (C), *Dimelaena oreina* (C), *Dimerella pineti* (C), *Diploschistes muscorum* (L), *Flavoparmelia baltimorensis* (C), *Flavopunctelia flaventior* (C), *F. soredica* (C), *Hypocenomyce scalaris* (C), *Hypogymnia physodes* (C), *Ionaspis lacustris* (C), *Lecanora dispersa* (C), *L. strobilina* (C), *L. symmicta* (C), *L. thysanophora* (C), *Lepraria lobificans* (C), *L. neglecta* (C), *Melanelia subaurifera* (C), *Micarea erratica* (C), *M. peliocarpa* (C, L), *Myxobilimbia sabuletorum* (C), *Myelochroa aurulenta* (L), *Ochrolechia arborea* (C, L), *Parmelia neodiscordans* (C), *P. squarrosa* (C), *P. sulcata* (C), *Phaeophyscia adiastola* (C), *P. cernohorskyi* (L), *P. rubropulchra* (C, L), *Physcia adscendens* (C), *P. millegrana* (C), *P. subtilis* (C), *Placynthiella oligotropha* (C), *Polysporina simplex* (C), *P. tahawasiana* (C), *Punctelia rufecta* (C), *P. subrudecta* (C, L), *Pycnothelia papillaria* (C), *Rhizocarpon infernulum* f. *sylvaticum* (C), *R. reductum* (C, L), *R. rubescens* (C), *Rinodina efflorescens* (C), *R. metaboliza* (C), *Scoliciosporum umbrinum* (C), *Trapeliopsis flexuosa* (C), *T. granulosa* (C), *Trapeliopsis viridescens* (C), *Umbilicaria mammulata* (C), *U. muhlenbergii* (C), *Verrucaria calkinsiana* (C), *Xanthoparmelia conspersa* (C), *X. plittii* (C).

Of the above taxa the following are apparently reported for the first time from the state of Pennsylvania: *Abrothallus caerulescens*, *Arthonia caesia*, *Aspicilia laevata*, *Biatora longispora*, *Chaenothecopsis savonica*, *Dictyocatenulata alba*, *Diploschistes muscorum*, *Lecanora strobilina*, *Lepraria lobificans*, *L. neglecta*, *Melanelia subaurifera*, *Micarea peliocarpa*, *Parmelia neodiscordans*, *Phaeophyscia adiastola*, *Porpidia tahawasiana*, *Rhizocarpon infernulum* f. *sylvaticum*, *R. reductum*, *R. rubescens*, *Rinodina efflorescens*, *R. metaboliza*, *Verrucaria calkinsiana*.

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I wish to thank A. Rhoads for facilitating much of the field work for this study. Also, M. Moody for her companionship during the a field work in Drakes Creek Gorge. I am also indebted to R.C. Harris for his constant help in determining/confirming problem specimens and performing TLC on the sterile sorediate crusts. And, J.W. Sheard who determined the specimens of *Rinodina*. As well as P. Diederich who determined the specimen of *Abrothallus caerulescens*. Too, my gratitude goes to the staff of Hickory Run and Lehigh Gorge States Parks for permission to collect within the park and for aiding A. Rhoads and me in our field work on several occasions.

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# Recent Records of Lichens in The Local Area (MD, NJ, PA).

## I.

JAMES C. LENDEMER<sup>1</sup>

ABSTRACT. – An index to the collections of lichens made by the author in Maryland, New Jersey, Pennsylvania from 2002 to 2004 is provided.

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Recent work in the field and herbarium has made it clear that the lichen flora of Pennsylvania is one of the most understudied in the eastern United States. Interestingly though the region has been under study since the time of Acharius by G.H.E. Muhlenberg and L.D. von Schweinitz, few collections have been made in recent years. Even J.W. Eckfeldt appears to have ventured little further than what is currently the suburban area around Philadelphia (see Lendemer & Hewitt (2002) for a discussion of Eckfeldt and his herbarium). Thus in an effort to document new records and, supplement or confirm previous records an index of the collections made in the Philadelphia tri-state area (MD, NJ, PA) is provided. Voucher specimens of all collections have been deposited in the herbarium of the author with duplicates of many collections in ASU, FH, MIN, NY and S. Many collections have also been (and will be) distributed in the *Lichens of Eastern North America Exsiccati* (Lendemer 2002, 2004, 2004a, in prep.).

Though these records do not represent any additions to the lichen flora of North America as a whole many do represent new records for counties especially those in Pennsylvania. I have not made an exhaustive attempt to determine if the collections reported here represent new state records. Those that clearly do, are marked with an “\*” following the identification. It should also be noted that these records are representative only of my collection opportunities from January, 2002 to November, 2003. This list will be supplemented in the future as further field work is carried out.

### LOCALITIES

#### Maryland

MD-P: Serpentine barrens, ¾ mile southeast of Pilot, Pilot Serpentine Barrens, Nature Conservancy Property, Cecil Co.

MD-PB: Forested serpentine barrens, along Octararo Creek, between Porter’s Bridge and Rowlandsburg, property of Hilltop Farms Inc., west of Colora, Cecil Co.

#### New Jersey

NJ-A: Recently burned (ca. 1989) oak-pitch pine (*Pinus rigida*) forest, south of Atsion, along the Mullica River, Batsto Natural Area, Wharton State Forest, Burlington Co.

NJ-AHF: Road through pine – oak forest with extensive ponds and wetlands, from Atsion to Hampton Furnace, Burlington Co.

NJ-AQB – Oak-pitch pine (*Pinus rigida*) forest, west of Atsion, between Atsion and Quaker Bridge, Batsto Natural Area, Wharton State Forest, Burlington Co.

NJ-B: Oak-pitch pine (*Pinus rigida*) forest, north of Batsto Village, Batsto Natural Area, Wharton State Forest, Burlington Co.

NJ-BAT: Oak-pitch pine (*Pinus rigida*) forest, ca. 1 mile east of Atsion, Batsto Natural Area, Wharton State Forest, Burlington Co.

NJ-BI: Clam shell walkway through salt marshes, along the west bank of the Maurice River, south of Bivalve, Cumberland Co.

NJ-BRK: Mixed hardwood forest, near intersection of NJ Route 47 & 670, near Bricksboro, Cumberland Co.

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- NJ-BSE: Dense swampy forest, middle portion of Bear Swamp, north of Turkey Point Corner, east of Frames Corner, south of Paynters Crossing, Cumberland Co.
- NJ-BSW: Margins of Bear Swamp West, ca.  $\frac{1}{4}$  to  $\frac{3}{4}$  mile from entrance along NJ Route 553, east of Newport, Cumberland Co.
- NJ-C: Pine-oak forest with sandy barrens west of Chatsworth Lake, along NJ Route 652, west of Chatsworth, Burlington Co.
- NJ-CP: Mixed pine-oak forest, along the Mullica River, Chips Folly Campground, ca.  $\frac{3}{4}$  mile north of Lower Bank, Burlington Co.
- NJ-EBW: Mixed pine (*Pinus*) – oak (*Quercus*) forest near intersection of Newport Centergrove Road and Bailey Road, Edward Bevan Wildlife Management Area, Cumberland Co.
- NJ-EBWII: Mixed pine (*Pinus*) – oak (*Quercus*) forest ca.  $\frac{3}{4}$  mile from intersection of Newport Centergrove Road and Factory Road, Edward Bevan Wildlife Management Area, Cumberland Co.
- NJ-HP: Abandoned blueberry farm bordering a mixed hardwood forest, south of NJ Route #561, ca.  $\frac{1}{2}$  mile northeast of Germania, southeast of Egg Harbor City, Atlantic Co.
- NJ-HR: Mixed hardwood forest, bordering a vernal pond, just north of Herschell Road, 2  $\frac{1}{4}$  miles northeast of Germania, southeast of Egg Harbor City, Atlantic Co.
- NJ-LBI: Maritime forest dominated by *Juniperus virginiana* with an understory of *Myrica*, Long Beach Island State Park, Ocean Co.
- NJ-LL: A swampy forest of *Ilex* and *Quercus*, along a small creek draining from the lower portion of Lummis Lake, just west of “Bloody Hollow” Road (name differs on local signs and maps); ca.  $\frac{1}{2}$  mile southwest of Lummistown, ca. 1  $\frac{1}{4}$  mile northeast of Cedarville, Cumberland Co.
- NJ-MAN: Pitch pine (*P. rigida*) dominant forest, along the swampy flats of the Manumuskin River, Nature Conservancy Protection Area, at the terminus of Barth Rd., Cumberland Co.
- NJ-MIP: Abandoned lots on the edge of oak woods, Millville Industrial Park, south of Millville, Cumberland Co.
- NJ-MPWA: Oak-pine woods, along railroad tracks, Menantico Ponds Wildlife Management Area, south of Millville, Cumberland Co.
- NJ-MRB: Natural Conservancy Property, along the west shore of the Maurice River, east of NJ Route 555, ca. 1 mile north of Laurel Lake, Cumberland Co.
- NJ-MS: Mixed pine/oak forest, Nature Conservancy Property along NJ Route 47 ca.  $\frac{1}{4}$  mile south of intersection with NJ Route 548, southeast of Mauricetown Station, Cumberland Co.
- NJ-ORP: Oswego River Preserve, bordered by Red Road and Jenkins Road, Burlington Co.
- NJ-PC: Pitch pine (*P. rigida*) barrens at the terminus of a small gravel road on the outer edge of the middle portion of Bear Swamp, north of Turkey Point Corner, east of Frames Corner, south of Paynters Crossing, Cumberland Co.
- NJ-PM: Mixed pine (*Pinus echinata*, *P. rigida*, and *P. virginiana*) / oak (*Quercus* spp.) forest, along an unnamed sand road, ca. 1 mile northwest of Batsto, Batsto Natural Area, Wharton State Forest, Burlington Co.
- NJ-PN: Swampy forest (with *Pinus rigida*, *Liquidambar*, *Populus*, etc.), adjacent to tidal marshes, along the west shore of the Maurice River, at the terminus of Strawberry Lane, Port Norris, Cumberland Co.
- NJ-QB: Cedar swamp,  $\frac{1}{2}$  mile north of Quaker Bridge, east shore of Batsto River, Batsto Natural Area, Wharton State Forest, Burlington Co.
- NJ-QBW: Oak-pitch pine (*Pinus rigida*) barrens, pitch pine dominant, northwest of Quaker Bridge, Batsto Natural Area, Wharton State Forest, Burlington Co.
- NJ-SP: Edge of a tidal marsh, c.  $\frac{3}{4}$  mile south of NJ Route 553, town of Shell Pile, south of Port Norris, Cumberland Co.
- NJ-SWBAT: Mixed pine-oak forest with stand of *Juniperus*, along the north bank of the Mullica River, southeast of Batsto, Sweetwater, Wharton State Forest, Burlington Co.
- NJ-T: Old homestead surrounded by extensive salt grass flats and marshes, along the east shore of the Maurice River, at the terminus of the paved portion of Thompsons Beach Road, Cumberland Co.
- NJ-U: Open meadow bordering pine (*Pinus*) / oak (*Quercus*) forest, along an unnamed sand/gravel road, ca.  $\frac{1}{2}$  mile west of intersection with May’s Landing Road, ca.  $\frac{1}{2}$  mile east of intersection with Union Road, Cumberland Co.
- NJ-W: Oak (*Quercus*) dominated pine (*Pinus*) / oak (*Quercus*) forest, at the intersection of three unnamed sand roads, Washington, Wharton State Forest, Burlington Co.

#### Pennsylvania

- PA-DCG: Mixed hardwood forest, along Drakes Creek, Drakes Creek Gorge, Lehigh Gorge State Park, Carbon Co.

- PA-GO: High altitude forest and scrub barrens, Glen Onoko Valley, Glen Onoko, Lehigh Gorge State Park, Jim Thorpe, Carbon Co.
- PA-HM: Mixed hardwood forest, Hawk Mountain Sanctuary, Hawk Mountain, Berks Co.
- PA-HMBF: Boulderfield (= River of Rocks), Hawk Mountain Sanctuary, Hawk Mountain, Berks Co.
- PA-HR: Shaded banks along trail around Hamburg Reservoir, Hamburg Reservoir, Hamburg Watershed, east of Hamburg, Berks Co.
- PA-HSP: Boulder field, Hickory Run State Park, Carbon Co.
- PA-HRSPII: Open grasslands with sparse *Populus grandidentata* on bluffs along the east shore of the Lehigh River, ca. 1 mile south of Lehigh Tannery, Hickory Run State Park, Carbon Co.
- PA-LH: Mixed hardwood forest along Lehigh Gorge Bicycle Trail, ca. ½ mile south of White Haven, Lehigh Gorge State Park, Luzerne Co.
- PA-LHII: Forest along Lehigh Gorge Bicycle Trail, between Glen Onoko and Rockport, Lehigh Gorge State Park, Carbon Co.
- PA-LHIII: Rocky slopes along railroad, between Drakes Creek Gorge and Mud Run Gorge, north of Glen Onoko, south of Rockport, east shore of the Lehigh River, Lehigh Gorge State Park, Carbon Co.
- PA-LHIV: Rocky cliff along Lehigh Gorge Bicycle Trail, ca. .7 mile north of Sandy Run, south of Lehigh Tannery, Lehigh Gorge State Park, Luzerne Co.
- PA-MRG: Mud Run Gorge, Mud Run Natural Area, Hickory Run State Forest, Carbon Co.
- PA-NCPI: Pine dominated pine-oak forest and serpentine barrens, Nottingham Serpentine Barrens, Nottingham County Park, southwest of Nottingham, Chester Co.
- PA-NCPII: Forest composed primarily of *Faxinus* and *Acer* with small exposure of gneiss and ruins of a building, northwest corner of Nottingham County Park, southwest of Nottingham, Chester Co.
- PA-P: Exposed boulder field on north face of summit of The Pinnacle, Hamburg Watershed, east of Hamburg, Berks Co.
- PA-SB: Grassy serpentine barren with little rock exposure, Sugartown Serpentine Barrens, east of Sugartown, south of Willistown, Chester Co.
- PA-SDT: Exposed rocky hillside with dead trees, along Shades of Death Trail, Hickory Run State Park, Carbon Co.
- PA-SL: Powerline cut, through a coastal plain mixed hardwood forest of *Quercus-Acer-Liquidambar* etc., Delhaas Woods, just west of Silver Lake Nature Center, Bristol, Bucks Co.
- PA-SR: Sandy Run Gorge, south of Lehigh Tannery, north of Rockport, west shore of the Lehigh River, Lehigh Gorge State Park, Luzerne Co.

## INDEX OF COLLECTIONS

- Abrothallus caerulescens* Kotte – PA-HRSPII, on *Xanthoparmelia* sp., Lendemer 1591 & Rhoads\*.
- Absconditella lignicola* Vězda& Pisut – NJ-HP, on *Pinus*, Lendemer et al. 1069\*.
- Acarospora* sp. – NJ-HP, on concrete, Lendemer et al. 1072, PA-LHII, on mortar, Lendemer 1656 & Rhoads.
- Acarospora fuscata* (Schrader) Arnold – PA-LHIII, on rock, Lendemer 1492 & Rhoads.
- Agonimia* sp. – PA-HRSPII, on bryophytes, Lendemer 1612 & Rhoads.
- Allocetraria oakesiana* (Tuckerman) Randlane & Thell – PA-HMBF, on bark, Lendemer 326 & Lendemer; PA-P, on rock, Lendemer et al. 322.
- Amandinea millaria* (Tuckerman) P. May & Sheard – NJ-LBI, on *Juniperus virginiana*, Lendemer 1796 & Joneson, Lendemer 1797 & Joneson, Lendemer 1799 & Joneson.
- Amandinea polyspora* (Willey) E. Lay & P. May in Sheard & P. May – NJ-AHF, on *Quercus*, Lendemer 1750 & Moody; NJ-HP, on *Acer rubrum*, Lendemer et al. 1063, on *Quercus*, Lendemer et al. 1064, Lendemer et al. 1472, Lendemer et al. 1480; NJ-ORP, on *Acer*, Lendemer 1196 & Moody; NJ-PN, on bark, Lendemer 616 & Moore; PA-NCPI, on *Quercus*, Lendemer 1710 & McCordell; PA-SL, on *Acer*, Lendemer et al. 1362, on *Pawlonia*, Lendemer et al. 1363.
- Amandinea punctata* (Hoffmann) Coppins & Scheidegger – MD-P, on rock, Lendemer 890; NJ-HP, on *Quercus*, Lendemer et al. 1479; PA-NCPI, on rock, Lendemer 1711 & McCordell.
- Anaptychia palmulata* (Michaux) Vainio – NJ-BSE, on *Acer rubrum*, Lendemer et al. 810; NJ-BSW, on *Magnolia*, Lendemer et al. 788.
- Anisomeridium leucocholorum* (Müll. Arg.) R.C. Harris – NJ-HP, on *Quercus*, Lendemer et al. 1600.
- Anisomeridium polypori* (Ellis & Everhart) M. E. Barr – NJ-ORP, on *Acer rubrum*, Lendemer 1252 & Moody\*; NJ-QB, on bark, Lendemer 972 & Smith\*.
- Arthonia caesia* (Flotow ex Körber) Körber – NJ-MS, on bark, Lendemer et al. 638; PA-HRSPII, on bark, Lendemer 1563 & Rhoads\*.
- Aspiclia* sp. – PA-HRSPII, on rock, Lendemer 1563 & Rhoads.

- Aspicilia laevata* (Acharius) Arnold - PA-LHIII, on rock, *Lendemer 1491 & Rhoads\**.
- Bacidia schweinitzii* (Fries ex Michener in Darlington) A. Schneider – NJ-BSE, on *Acer*, *Lendemer et al. 792*; NJ-BSW, on *Magnolia*, *Lendemer et al. 789*; NJ-EBWII, on *Quercus*, *Lendemer et al. 807*; NJ-MS, on *Quercus*, *Lendemer et al. 628*.
- Bacidina egenula* (Nylander) Vězda – NJ-AHF, on concrete, *Lendemer 1727 & Moody*; NJ-B, on clam shells, *Lendemer 611 & Moore*; NJ-ORP, on rock, *Lendemer 1211 & Moody*; NJ-SP, on clam shells, *Lendemer et al. 642*.
- Biatora longispora* (Degelius) Lendemer & Printzen – PA-DCG, on *Betula*, *Lendemer 1290 & Rhoads\**, on witchazel, *Lendemer 1291 & Rhoads\**, on *Acer*, *Lendemer 1292 & Rhoads\**; NJ-BSE, on *Acer*, *Lendemer et al. 793*.
- Buellia* spp. – MD-P, on rock, *Lendemer 886*, *Lendemer 892*.
- Buellia curtisii* (Tuckerman) Imshaug – NJ-BSE, on *Quercus*, *Lendemer et al. 859*; NJ-BSW, on *Quercus*, *Lendemer et al. 775*; NJ-C, on bark, *Lendemer et al. 1118*; NJ-EBWII, on bark, *Lendemer et al. 818*; NJ-HP, on *Vaccinium*, *Lendemer et al. 1469*, on *Quercus*, *Lendemer et al. 1481*; NJ-SWBAT, on *Quercus*, *Lendemer et al. 1477*; NJ-U, on *Quercus*, *Lendemer et al. 1030*.
- Buellia spuria* (Schaerer) Anzi – MD-P, on rock, *Lendemer 887*.
- Buellia vernicoma* (Tuckerman) Tuckerman – NJ-BSE, on *Acer rubrum*, *Lendemer et al. 817*.
- Calicium abietinum* Persoon – NJ-ORP, on *Pinus*, *Lendemer 1188 & Moody\**.
- Caloplaca citrina* (Hoffmann) Th. Fries – NJ-AHF, on brick, *Lendemer 1758 & Moody*; NJ-B, on shells, *Lendemer 610 & Moore*.
- Caloplaca feracissima* H. Magnusson – NJ-B, on weathered shells, *Lendemer 466 & Smith*.
- Caloplaca flavovirescens* (Wulfen) Dalla Torre & Sarnthein – NJ-AHF, on cement, *Lendemer 1749 & Moody*; PA-NCPI, on rock, *Lendemer 1700 & McCordell*.
- Caloplaca subsoluta* (Nylander) Zahlbrückner – MD-P, on shale, *Lendemer 889*; MD-PB, on granite in stream, *Lendemer 477 & McCordell*; PA-NCPI, on rock, *Lendemer 1713 & McCordell*; PA-HRSPII, on rock, *Lendemer 1652 & Rhoads*; PA-SB, on rock, *Lendemer et al. 1420*.
- Candelaria concolor* (Dickson) Stein – NJ-W, on *Quercus*, *Lendemer et al. 1004*, *Lendemer et al. 1005*.
- Candelariella efflorescens* R.C. Harris & Buck – PA-HRSPII, on *Populus grandidentata*, *Lendemer 1569 & Rhoads*.
- Candelariella reflexa* (Nylander) Lettau – NJ-HP, on *Quercus*, *Lendemer et al. 1470*; NJ-AHF, on *Quercus*, *Lendemer 1761 & Moody*.
- Candelariella vitellina* (Hoffmann) Müll. Arg. – MD-P, on rock, *Lendemer 891*; PA-HRSPII, on rock, *Lendemer 1585 & Rhoads*.
- Catinaria atropurpurea* (Schrader) Vězda & Poelt – NJ-ORP, on *Acer*, *Lendemer 1197 & Moody*.
- Chaenothecopsis savonica* (Räsänen) Tibell – NJ-AHF, on lignum, *Lendemer 1722 & Moody*; PA-PHJ, on *Quercus*, *Lendemer 1462 & Rhoads\**.
- Chrismofulvea dialyta* (Nylander) Marbach – PA-DCG, on *Acer rubrum*, *Lendemer 1295 & Rhoads*, on *Quercus*, *Lendemer 1463 & Moody*; PA-MRG, on bark, *Lendemer 884 & Tripp*, *Lendemer 885 & Tripp*; PA-P, on wood, *Lendemer 463 & Smith*; PA-SRG, on bark, *Lendemer 1593 & Rhoads*.
- Cladonia arbuscula* (Wallroth) Flotow – NJ-AHF, on soil, *Lendemer 1762 & Moody*; NJ-B, on sandy soil, *Lendemer 437 & Smith*.
- Cladonia atlantica* A. Evans – MD-P, on organic matter, *Lendemer 850*; NJ-AHF, on soil, *Lendemer 1715 & Moody*; NJ-A, on soil with bryophytes, *Lendemer 387 & Smith*, *Lendemer et al. 490*; NJ-BSE, on lignum, *Lendemer et al. 1542*; NJ-C, on sandy soil, *Lendemer et al. 1099*; NJ-MAN, on organic matter, *Lendemer 512 & Moore*, *Lendemer 531 & Smith*; NJ-PC, on sandy soil, *Lendemer 518 & Moore*; PA-LH, on moss and lignum, *Lendemer 1278 & Rhoads*.
- Cladonia caespitica* (Persoon) Flörke – NJ-BSE, on lignum, *Lendemer et al. 1541*; PA-DCG, on *Betula*, *Lendemer 1281 & Rhoads*, on organic debris, *Lendemer 1499 & Rhoads*.
- Cladonia cf. carneola* (Fries) Fries – MD-P, on wet organic debris, *Lendemer 851*.
- Cladonia coniocraea* (Flörke) Sprengel – NJ-ORP, on lignum, *Lendemer 1206 & Moody*.
- Cladonia cristatella* Tuckerman – NJ-A, on soil, *Lendemer 383 & Smith*; NJ-AHF, on wood, *Lendemer 1718 & Moody*; NJ-MIP, on soil, *Lendemer et al. 456*; PA-HRSPII, on soil, *Lendemer 1544 & Rhoads*; PA-NCPI, on lignum, *Lendemer 1685 & McCordell*.
- Cladonia dimorphoclada* Robbins – NJ-B, on soil, *Lendemer 440 & Smith*; NJ-BSE, on soil, *Lendemer et al. 1552*; NJ-MPWA, on soil, *Lendemer et al. 457*, *Lendemer et al. 464*.
- Cladonia floerkeana* (Fries) Flörke – NJ-C, on *Pinus*, *Lendemer et al. 1104*.
- Cladonia floridana* Vainio – NJ-A, on soil with bryophytes, *Lendemer et al. 431*.
- Cladonia furcata* (Hudson) Schrader – PA-HM, on rocks with bryophytes, *Lendemer 371 & Smith*.

- Cladonia grayi* G. Merrill ex Sandstede – MD-P, on organic matter, *Lendemer* 849; NJ-A, over bryophytes, *Lendemer* et al. 488; NJ-AHF, on lignum, *Lendemer* 1719 & Moody; NJ-C, on organic matter, *Lendemer* et al. 1100, *Lendemer* et al. 1101; NJ-MAN, on wood, *Lendemer* 504 & Moore; NJ-MPWS, over organic matter and soil, *Lendemer* et al. 491; NJ-ORP, on organic matter, *Lendemer* 1205 & Moody; NJ-U, on sand soil, *Lendemer* 1036; PA-GO, on soil and organic debris, *Lendemer* 484 & Smith; PA-HRSPII, on lignum, *Lendemer* 1543 & Rhoads; PA-LGS, on lignum and bryophytes, *Lendemer* 1424 & Moody; PA-LH, on bryophytes, *Lendemer* 1276 & Rhoads; PA-NCPI, on lignum, *Lendemer* 1675 & McCarell.
- Cladonia incrassata* Flörke – NJ-AHF, on *Pinus*, *Lendemer* 1720 & Moody, *Lendemer* 1731 & Moody; NJ-BSE, on lignum, *Lendemer* et al. 812; NJ-ORP, on lignum, *Lendemer* 1203 & Moody; PA-DCG, on lignum, *Lendemer* 1664 & Rhoads.
- Cladonia macilenta* Hoffmann – MD-P, on lignum, *Lendemer* 852; NJ-AHF, on soil, *Lendemer* 1716 & Moody; NJ-AQB, on sandy soil, *Lendemer* 980 & Smith, *Lendemer* 981 & Smith; NJ-BSE, on lignum, *Lendemer* 1553 & Rhoads; NJ-ORP, on lignum, *Lendemer* 1207 & Moody (barbatic acid chemotype); PA-HRSPII, on lignum, *Lendemer* 1550 & Rhoads.
- Cladonia ochrochlora* Flörke - PA-NCPI, on *Malus*, *Lendemer* 1683 & McCarell.
- Cladonia parasitica* (Hoffmann) Hoffmann – NJ-ORP, on *Pinus rigida*, *Lendemer* 1202 & Moody; PA-GO, on rotten log, *Lendemer* 485 & Smith.
- Cladonia peziziformis* (With.) J.R. Laundon – PA-NCPI, on lignum, *Lendemer* 1714 & McCarell.
- Cladonia piedmontensis* G. Merrill – PA-HRSPII, on lignum, *Lendemer* 1551 & Rhoads; PA-NCPI, on lignum, *Lendemer* 1676 & McCarell, *Lendemer* 1687 & McCarell.
- Cladonia pleurota* (Flörke) Schaerer – NJ-AHF, on soil, *Lendemer* 1759 & Moody.
- Cladonia polycarpoides* Nylander – NJ-BSW, on soil, *Lendemer* et al. 883; NJ-U, on sandy soil, *Lendemer* et al. 1037; PA-HRSPII, on sandy soil, *Lendemer* 1549 & Rhoads; PA-NCPI, on soil, *Lendemer* 1712 & McCarell.
- Cladonia ramulosa* (With.) J.R. Laundon – NJ-A, over bryophytes, *Lendemer* 431 & Smith.
- Cladonia rangiferina* (L.) F. H. Wigg. – PA-DCG, on soil, *Lendemer* 1427 & Moody; PA-LH, on soil, *Lendemer* 1270 & Rhoads.
- Cladonia rappii* A. Evans – NJ-A, on soil, *Lendemer* 386 & Smith; NJ-B, on soil, *Lendemer* 438 & Smith; NJ-ORP, on sandy soil, *Lendemer* 1199 & Moody, *Lendemer* 1200 & Moody, on lignum, *Lendemer* 1201 & Moody.
- Cladonia rei* Schaerer – PA-HRSPII, on lignum, *Lendemer* 1547 & Rhoads.
- Cladonia squamosa* Hoffmann – PA-DCG, on soil, *Lendemer* 1426 & Moody.
- Cladonia strepsilis* (Acharius) Grognot – PA-HRSPII, on lignum, *Lendemer* 1548 & Rhoads.
- Cladonia submittis* A. Evans – NJ-A, on sandy soil, *Lendemer* et al. 432; NJ-C, on sandy soil, *Lendemer* et al. 1114; NJ-MAN, on sandy soil, *Lendemer* 511 & Moore.
- Cladonia subtenuis* (Abbayes) Mattick – NJ-A, on organic matter, *Lendemer* 385 & Smith; NJ-AHF, on soil, *Lendemer* 1763 & Moody; NJ-MAN, on organic matter, *Lendemer* 535 & Smith; NJ-MPWA, on soil, *Lendemer* et al. 460; PA-NCPI, on soil, *Lendemer* 1677 & McCarell.
- Cladonia uncialis* (L.) Wigg. – NJ-A, on soil, *Lendemer* & Smith 384; NJ-AHF, on soil, *Lendemer* 1717 & Moody; NJ-MAN, on soil, *Lendemer* 533 & Smith. NJ-MPWA, on soil, *Lendemer* et al. 465.
- Dermatocarpon miniatum* (L.) Mann. – MD-PB, on rock in water, *Lendemer* 308.
- Dibaeis baeomyces* (L.) Rambold & Hertel – NJ-PC, on soil, *Lendemer* 508 & Moore; PA-DCG, on soil, *Lendemer* 1277 & Rhoads; PA-GO, on soil, *Lendemer* 482 & Smith; PA-HR, on soil, *Lendemer* 471 & Smith; PA-HRSPII, on soil, *Lendemer* 1545 & Rhoads.
- Dictyocatenulata alba* Finley & Morris – PA-LGS, on *Betula*, *Lendemer* 1425 & Moody\*.
- See *Lendemer* & Harris (in press) for a discussion of this species and its recognition as a lichenized fungus. This collection will be widely distributed as *Lichenes of Eastern North America Exsiccata, III: 147*.
- Dimelaena oreina* (Acharius) Norman – PA-LGS, on rock, *Lendemer* 1475.
- Dimerella pineti* (Acharius) Vězda – PA-DCG, on organic debris, *Lendemer* 1301 & Moody, *Lendemer* 1501 & Rhoads; PA-MRG, on bryophytes, *Lendemer* 847 & Tripp; PA-SR, on organic debris, *Lendemer* 1518 & Rhoads.
- Diploschistes muscorum* (Scopoli) R. Santesson – PA-LH, on *Cladonia grayi*, *Lendemer* 1294 & Rhoads\*; NJ-MAN, on weathered wood & *Hypocenemyce anthracophila*, *Lendemer* 527 & Smith.
- Endocarpon* spp. – NJ-AHF, on rock, *Lendemer* 1765 & Moody, *Lendemer* 1805 & Joneson; PA-LHII, on rock, *Lendemer* 1502 & Rhoads.
- Endocarpon pallidulum* (Nylander) Nylander – NJ-HP, on concrete, *Lendemer* et al. 1075\*; PA-NCPII, on rock, *Lendemer* 1689 & McCarell\*.

- Endocarpon pussilum* Hedwig – NJ-B, on weathered shells, Lendemer 467 & Smith; NJ-C, on porcelain, Lendemer et al. 1113; NJ-SP, on shells, Lendemer et al. 637.
- Flavoparmelia baltimorensis* (Gyelnik & Fóriss) Hale – PA-HRSPII, on rock, Lendemer 1571 & Rhoads; PA-MRG, on rock, Lendemer 840 & Tripp; PA-MRGII, on rock, Lendemer 1503 & Rhoads.
- Flavoparmelia caperata* (L.) Hale – NJ-AQB, on *Quercus*, Lendemer 965 & Smith; NJ-B, on bark, Lendemer 442 & Smith; NJ-EBW, on *Quercus*, Lendemer et al. 761; NJ-MAN, on *P. rigida*, Lendemer 523 & Smith; NJ-MS, on *Quercus*, Lendemer et al. 632 (apotheciate); NJ-QB, on *Pinus*, Lendemer 655 & Tripp; PA-DCG, on rock, Lendemer 1258 & Rhoads; PA-GO, on rock, Lendemer 662 & Moody; PA-NCPI, on *Malus*, Lendemer 1679 & McCordell.
- Flavopunctelia flaventior* (Stirton) Hale – PA-HRSPII, on *Populus grandidentata*, Lendemer 1559 & Rhoads.
- Flavopunctelia soredica* (Nylander) Hale – PA-MRGII, on *Quercus*, Lendemer 1497 & Rhoads.
- Fuscidea* sp.(?) – PA-HRSPII, on rock, Lendemer 1578 & Rhoads.
- Fuscidea arboricola* Coppins & Tønsberg – PA-HRSPII, on bark, Lendemer 1582 & Rhoads\*.
- Graphis scripta* (L.) Acharius – NJ-BSE, on *Magnolia virginiana*, Lendemer et al. 1521; NJ-MAN, on *Quercus*, Lendemer 534 & Smith.
- Gyalideopsis moodyae* Lendemer & Luecking ined. – NJ-HP, on sandy soil, Lendemer et al. 1073\*.
- Hafellia disciformis* (Fries) Marbach & Mayrhofer – NJ-MS, on *Quercus*, Lendemer et al. 625.
- Hertelidea pseudobotryosa* R.C. Harris, Ladd & Printzen in Printzen & Kantvilas – NJ-MAN, on *Pinus*, Lendemer et al. 1038\*, Lendemer et al. 1039\*.
- Heterodermia obscurata* (Nylander) Trevisan – NJ-AHF, on *Quercus*, Lendemer 1728 & Moody; NJ-BAT, on *Quercus*, Lendemer 837 & Smith, NJ-MAN, on *Quercus*, Lendemer et al. 1028; NJ-SWBAT, on *Quercus*, Lendemer et al. 1443.
- Heterodermia speciosa* (Wulfen) Trevisan – NJ-BAT, on *Quercus*, Lendemer 836 & Smith; NJ-BSW, on *Quercus*, Lendemer et al. 764; NJ-QB, on *Quercus*, Lendemer 953 & Smith; NJ-SWBAT, on *Quercus*, Lendemer et al. 1444.
- Hypocenomyce anthracophila* (Nylander) P. James & G. Schneider – NJ-MAN, on weathered wood, Lendemer 543 & Smith; NJ-ORP, on *C. thyoides*, Lendemer 1180 & Moody; NJ-QB, on decorticate trunks of *C. thyoides*, Lendemer 648 & Tripp; PA-SDT, on bark of conifers, Lendemer 329 & Lendemer.
- Hypocenomyce friesii* (Acharius) P. James & G. Schneider – NJ-QB, on bark of dead *C. thyoides*, Lendemer 647 & Tripp\*.
- Hypocenomyce scalaris* (Acharius) M. Choisy – NJ-C, on *Pinus*, Lendemer et al. 1106; NJ-MAN, on *Pinus rigida*, Lendemer et al. 1033; NJ-ORP, on *P. rigida*, Lendemer 1187 & Moody; NJ-PM, on *P. rigida*, Lendemer et al. 994, Lendemer et al. 997; PA-HRSPII, on bark, Lendemer 1575 & Rhoads; PA-MRGII, on *Quercus*, Lendemer 1498 & Rhoads; PA-NCPI, on *Pinus*, Lendemer 1707 & McCordell.
- Hypogymnia physodes* (L.) Nylander – NJ-C, on *Quercus*, Lendemer et al. 1102; NJ-HP, on *Vaccinium*, Lendemer et al. 1062; NJ-QBN, on base of *Quercus*, Lendemer 973 & Smith; PA-HSP, on conifer bark, Lendemer 328 & Lendemer; PA-MRG, on bark, Lendemer 863 & Tripp; PA-SDT, on bark of conifers, Lendemer 330 & Lendemer.
- Hypotrachyna livida* (Taylor) Hale – NJ-BAT, on *Quercus*, Lendemer 833 & Smith; NJ-BSW, on *Quercus*, Lendemer et al. 763; NJ-EBWII, on bark, Lendemer et al. 806; NJ-HP, on *Vaccinium*, Lendemer et al. 1610; NJ-QB, on *Quercus*, Lendemer 646 & Tripp; NJ-QBN, on *Quercus*, Lendemer 970 & Smith.
- Hypotrachyna osseoalba* (Vainio) Park & Hale – NJ-QB, on bark, Lendemer 645 & Tripp, Lendemer 964 & Smith, Lendemer 969 & Smith.
- Imshaugia aleurites* (Acharius) S.F. Meyer – NJ-AHF, on *Pinus*, Lendemer 1737 & Moody; NJ-C, on *Pinus*, Lendemer et al. 1105; NJ-MAN, on *Pinus rigida*, Lendemer 505 & Moore, Lendemer 522 & Smith; NJ-ORP, on *Vaccinium*, Lendemer 1189 & Moody; NJ-PM, on *P. rigida*, Lendemer et al. 993; NJ-QBW, on *P. rigida*, Lendemer 854 & Smith.
- Imshaugia placorodia* (Acharius) S.F. Meyer – NJ-AHF, on *Pinus*, Lendemer 1733 & Moody; NJ-C, on *Pinus*, Lendemer et al. 1107; NJ-MAN, on *P. rigida*, Lendemer 506 & Moore; NJ-PM, on *P. rigida*, Lendemer et al. 987.
- Ionaspis lacustris* (With.) Lutzoni – PA-MRG, on rock, Lendemer 860 & Tripp.
- Lasallia papulosa* (Acharius) Llano – PA-GO, on rock, Lendemer 479 & Smith; PA-HMBF, on rock, Lendemer 369 & Smith.
- Lasallia pensylvanica* (Hoffmann) Llano – PA-HMBF, on rock, Lendemer 370 & Smith; PA-P, on rock, Lendemer 472 & Smith.
- Lecanora* sp. (?) (TLC: atranorin, zeorin) – PA-DCG, on *Acer*, Lendemer 1275 & Rhoads, Lendemer 1508 & Rhoads.

- Lecanora dispersa* (Persoon) Sommerfelt – NJ-AHF, on rock, Lendemer 1753 & Moody, Lendemer 1754 & Moody; NJ-SP, on clam shells, Lendemer et al. 641; NJ-U, on cement, Lendemer et al. 1032; PA-HRSPII, on rock, Lendemer 1567 & Rhoads.
- Lecanora hybocarpa* (Tuckerman) Brodo – NJ-BRK, on bark, Lendemer et al. 452; NJ-BSE, Lendemer et al. 1533; NJ-HP, on *Quercus*, Lendemer et al. 1486; NJ-SWBAT, on *Quercus*, Lendemer et al. 1487; NJ-W, on *Quercus*, Lendemer et al. 1007.
- Lecanora minutella* Nylander – NJ-B, on cones of *P. rigida*, Lendemer 434 & Smith; NJ-BRK, on cones of *Pinus rigida*, Lendemer et al. 500; NJ-BSE, on *Pinus rigida*, Lendemer et al. 1659; NJ-PN, on *Pinus*, Lendemer 615 & Moore.
- Lecanora rugosella* Zahlbrückner – NJ-ORP, on *Acer rubrum*, Lendemer 1251 & Moody\*.
- Lecanora strobilina* (Sprengel) Kieffer – NJ-AHF, on *Quercus*, Lendemer 1755 & Moody; NJ-BSE, Lendemer et al. 1536; NJ-HP, on *Pinus*, Lendemer et al. 1070, on *Quercus*, Lendemer et al. 1476; NJ-ORP, on *Vaccinium*, Lendemer 1297 & Moody, on twigs, Lendemer 1195 & Moody; PA-DCG, on *Quercus*, Lendemer 1428 & Moody\*; PA-MRG, on bark, Lendemer 845 & Tripp\*.
- Lecanora subpallens* Zahlbrückner – NJ-BRK, on bark, Lendemer et al. 501; NJ-BSE, on *Quercus*, Lendemer et al. 856, Lendemer et al. 1532, Lendemer et al. 1535; NJ-EBW, on *Quercus*, Lendemer et al. 781; on *Quercus*, Lendemer et al. 784; NJ-LBI, on bark, Lendemer 1807 & Joneson; NJ-MAN, on *Quercus*, Lendemer 525 & Smith; NJ-MS, on *Quercus*, Lendemer et al. 627; NJ-PM, on *Quercus*, Lendemer et al. 998; NJ-SWBAT, on *Quercus*, Lendemer et al. 1478.
- Lumbsch et al. (1997) treated *Lecanora caesiorubella* ssp. *prolifera* (Fink in Hedrick) R. C. Harris in Vězda, to the species level, noting the correct name to be *L. subpallens* Zahlbrückner. Subsequent authors in North America do not seem to have followed this treatment likely because in the same publication the subspecies of *L. caesiorubella* were also reduced into a single species. I have chosen to take the middle ground and agree that *L. caesiorubella* ssp. *prolifera* is worthy of recognition at the specific rank. However, it seems that lumping the subspecies which have clearly defined ranges and chemistries would result in a loss of information, thus the other subspecies of *L. caesiorubella* are retained.
- Lecanora symmicta* (Acharius) Acharius – PA-HRSPII, on *Populus grandidentata*, Lendemer 1565 & Rhoads.
- Lecanora thysanophora* R.C. Harris – NJ-BSE, on *Acer rubrum*, Lendemer et al. 1528; NJ-ORP, on *Acer rubrum*, Lendemer 1176 & Moody; NJ-SWBAT, on *Quercus*, Lendemer et al. 1608; PA-SRG, on *Acer*, Lendemer 1595 & Rhoads.
- Lecidzia berengeriana* (Massalongo) Nylander s. lat. – NJ-HR, on mossy base of *Quercus*, Lendemer et al. 1059.
- Lecidea plebeja* Nylander – NJ-AHF, on wooden bridge supports, Lendemer 1723 & Moody.
- Lecidella* sp.(?) – NJ-BSE, on lignum, Lendemer et al. 1590.
- Lepraria* sp. (TLC: atranorin + zeorin) – NJ-BSE, on *Quercus*, Lendemer et al. 1526.
- Lepraria* sp. 2 (Lendemer 2004b) – PA-SRG, on *Acer*, Lendemer 1592 & Rhoads.
- Lepraria* sp. 3 (Lendemer 2004b) PA-DCG, on rock, Lendemer 1288 & Rhoads.
- Lepraria incana* (L.) Acharius – NJ-BSE, on bryophytes & *Quercus*, Lendemer et al. 1534\*.
- Lepraria lobificans* Nylander – NJ-AHF, on rock, Lendemer 1735 & Moody, Lendemer 1744 & Moody, Lendemer 1801 & Joneson, on *Quercus*, Lendemer 1745 & Moody; NJ-BSE, on *Quercus*, Lendemer et al. 1539; PA-DCG, on rock & bryophytes over rock, Lendemer 1581 & Rhoads\*, Lendemer 1604 & Rhoads\*, Lendemer 1606 & Rhoads\*; PA-NCPI, on *Juniperus*, Lendemer 1682 & McCardell\*, on bark, Lendemer 1694 & McCardell\*.
- Lepraria neglecta* (Nylander) Erichsen – PA-LHIII, on *Quercus*, Lendemer 1512 & Rhoads\*.
- Leptogium cyanescens* (Rabenhorst) Körber – NJ-BSE, on *Acer*, Lendemer et al. 791.
- Lichenodiplis mariana* (V. Atienza) Diederich – NJ-CP, on *Pertusaria pustulata*, Lendemer et al. 1465\*.
- Lobaria quercizans* Michaux – NJ-BSE, on *Acer rubrum*, Lendemer et al. 813.
- Loxospora pustulata* (Brodo & W.L. Culberson) R.C. Harris – NJ-AHF, on *Quercus*, Lendemer 1732 & Moody, Lendemer 1740 & Moody; NJ-AQB, on *Quercus*, Lendemer 958 & Smith; NJ-BSW, on *Quercus*, Lendemer et al. 772; NJ-EBW, on *Quercus*, Lendemer et al. 779, Lendemer et al. 780; NJ-ORP, on *Acer*, Lendemer 1184 & Moody, Lendemer 1185 & Moody, on *Vaccinium*, Lendemer 1191 & Moody, on shrubs, Lendemer 1192 & Moody; NJ-PM, on *Quercus*, Lendemer et al. 989; NJ-QB, on *Quercus*, Lendemer 658 & Tripp; Lendemer 959 & Smith; PA-GO, on *Quercus*, Lendemer 663 & Moody.
- Melanelia culbersonii* (Hale) Thell – PA-P, on boulders, Lendemer et al. 272, Lendemer 286\*.
- Melanelia subaurifera* (Nylander) Esslinger – NJ-HP, on *Acer rubrum*, Lendemer et al. 1058, on *Vaccinium*, Lendemer et al. 1449; PA-HRSPII, on *Populus grandidentata*, Lendemer 1561 & Rhoads\*; PA-DCG, on *Quercus*, Lendemer 1286 & Rhoads\*.

*Micarea chlorosticta* (Tuckerman) R.C. Harris – NJ-ORP, on *Chamaecyparis thyoides*, Lendemer 1213 & Moody.

*Micarea erratica* (Körber) Hertel et al. – NJ-BSE, on rock, Lendemer et al. 1523; NJ-ORP, on rock, Lendemer 1524 & Moody; PA-LHIII, on rock, Lendemer 1514 & Rhoads; PA-NCPI, on rock, Lendemer 1696 & McCarell, Lendemer 1697 & McCarell, Lendemer 1698 & McCarell, Lendemer 1699 & McCarell.

*Micarea melaena* (Nylander) Hedlund – NJ-C, on *Chamaecyparis thyoides*, Lendemer et al. 1115, Lendemer et al. 1116.

*Micarea peliocarpa* (Anzi) Coppins & R. Santesson – PA-DCG, on bark, Lendemer 1299 & Rhoads\*, Lendemer 1305 & Rhoads\*; PA-LHII, on bryophytes, Lendemer 1467 & Rhoads\*; PA-LHIV, on bryophytes, Lendemer 1520 & Rhoads\*.

*Micarea prasina* Fries – NJ-ORP, on bark, Lendemer 1215 & Moody.

*Mycoblastus fucatus* (?) – NJ-ORP, on *Vaccinium*, Lendemer 1190 & Moody.

This collection contains atranorin (trace), chloratranorin, and fumarprotocetraric acid by TLC and lacks a blue thallus. It may also fall outside the range of *M. fucatus* (R.C. Harris, pers. comm.).

*Myelochroa aurulenta* (Tuckerman) Elix & Hale – NJ-AQB, on *Quercus*, Lendemer 961 & Smith; NJ-EBWII, on *Quercus*, Lendemer et al. 819; NJ-ORP, on *Acer*, Lendemer 1183 & Moody; NJ-SWBAT, on *Juniperus*, Lendemer et al. 1442.; PA-NCPI, on *Quercus*, Lendemer 1684 & McCarell; PA-SR, on *Quercus*, Lendemer 1519 & Rhoads.

*Myxobilimbia sabuletorum* (Schreber) Hafellner – PA-DCG, on moss, Lendemer 1298 & Rhoads.

*Ochrolechia arborea* (Kreyer) Almborn – NJ-C, on *Quercus*, Lendemer et al. 1119; PA-DCG, on *Betula*, Lendemer 1272 & Rhoads, Lendemer 1273 & Rhoads, Lendemer 1274 & Rhoads; PA-HRSPII, on bark, Lendemer 1573 & Rhoads; PA-MRGII, on *Betula*, Lendemer 1506 & Rhoads, Lendemer 1510 & Rhoads.

*Ochrolechia pseudopallescens* Brodo – NJ-A, on *P. rigida*, Lendemer et al. 494; NJ-C, on *Quercus*, Lendemer et al. 1120; NJ-ORP, on *Vaccinium*, Lendemer 1194 & Moody; NJ-PM, on *P. rigida*, Lendemer et al. 986; NJ-QBN, on *Quercus*, Lendemer 982 & Smith; PA-HSP, on exposed conifer branches, Lendemer 391 & Smith.

*Ochrolechia yasudae* Vainio – NJ-A, on smooth bark, Lendemer et al. 495.

*Parmelia neodiscordans* Hale – PA-GO, on rock, Lendemer 661 & Moody\*; PA-MRG, on rock, Lendemer 841 & Tripp\*, Lendemer 844 & Tripp\*.

*Parmelia squarrosa* Hale – NJ-AHF, on *Quercus*, Lendemer 1734 & Moody; NJ-BAT, on *Quercus*, Lendemer 832 & Smith; NJ-BSE, on *Acer rubrum*, Lendemer et al. 1527; NJ-BSW, on *Quercus*, Lendemer et al. 767; NJ-EBWII, on *Quercus*, Lendemer et al. 809; NJ-HP, on *Quercus*, Lendemer et al. 1078; NJ-MAN, on bark, Lendemer 529 & Smith; NJ-ORP, on *Acer*, Lendemer 1182 & Moody; PA-HRSPII, on *Malus*, Lendemer 1557 & Rhoads; PA-MRG, on bark, Lendemer 842 & Tripp.

*Parmelia sulcata* Taylor – NJ-B, on bark, Lendemer 441 & Smith; NJ-PM, on *Quercus*, Lendemer et al. 988; PA-GO, on rock, Lendemer 487 & Smith; PA-HRSPII, on *Populus grandidentata*, Lendemer 1560 & Rhoads.

*Parmelinopsis horrescens* (Taylor) Elix & Hale – NJ-QB, on bark, Lendemer 986p.p. & Smith\* (ASU, PH).

*Parmelinopsis minarum* (Vainio) Elix & Hale – NJ-HP, on *Quercus*, Lendemer et al. 1060; NJ-ORP, on *Acer*, Lendemer 1177 & Moody, on shrubs, Lendemer & Moody 1178; NJ-QB, on bark, Lendemer 968p.p. (NY); PA-HRSPII, on *Malus*, Lendemer 1555 & Rhoads.

*Parmeliopsis subambigua* Gyelnik – NJ-MS, on *Pinus*, Lendemer et al. 634; NJ-QB, on *Pinus*, Lendemer 657 & Tripp.

*Parmotrema gardneri* (Dodge) Sérusiaux – NJ-BSE, on *Acer*, Lendemer et al. 814; NJ-HP, on *Vaccinium*, Lendemer et al. 1071.

*Parmotrema hypotropum* (Nylander) Hale – NJ-AHF, on *Quercus*, Lendemer 1721 & Moody, Lendemer 1729 & Moody, Lendemer 1730 & Moody; NJ-B, on bark, Lendemer 373 & Smith; NJ-C, on *Quercus*, Lendemer et al. 1132; NJ-HP, on *Vaccinium*, Lendemer et al. 1085; NJ-MAN, on *Quercus*, Lendemer et al. 1027; NJ-PM, on *Quercus*, Lendemer et al. 1010, Lendemer et al. 1011; NJ-QBN, on *Quercus*, Lendemer 974 & Smith, Lendemer 975 & Smith; NJ-U, on *Pinus*, Lendemer et al. 1026; PA-NCPI, on *Malus*, Lendemer 1705 & McCarell; PA-SL, on *Pawlonia*, Lendemer et al. 1423.

*Pertusaria amara* (Acharius) Nylander – NJ-AHF, on *Quercus*, Lendemer 1760 & Moody, Lendemer 1761 & Moody.

*Pertusaria multipunctoides* Dibben – NJ-BSW, on *Magnolia virginiana*, Lendemer 516 & Moore, Lendemer et al. 822.

- Pertusaria paratuberculifera* Dibben – NJ-BSE, on *Quercus*, Lendemer et al. 855; NJ-BSW, on *Quercus*, Lendemer et al. 768; NJ-EBWII, on *Quercus*, Lendemer et al. 808; NJ-QB, on *Quercus*, Lendemer 649 & Tripp, Lendemer 966 & Smith; NJ-MAN, on *Quercus*, Lendemer 507 & Moore.
- Pertusaria pustulata* (Acharius) Duby – NJ-AHF, on *Quercus*, Lendemer 1757 & Moody; NJ-HP, on *Quercus*, Lendemer et al. 1488.
- Pertusaria subpertusa* Brodo – NJ-NSE, on *Acer rubrum*, Lendemer et al. 816.
- Pertusaria xanthodes* Müll. Arg. – NJ-BSW, on *Quercus*, Lendemer et al. 774; NJ-HP, on *Vaccinium*, Lendemer et al. 1468, on shrubs, Lendemer et al. 1473; NJ-MAN, on small twigs, Lendemer 502 & Moore, Lendemer 524 & Smith; NJ-PN, on bark, Lendemer 617 & Moore.
- Phaeographis inusta* (Acharius) Müll. Arg. – NJ-HR, on bark, Lendemer et al. 1057; NJ-LL, on *Ilex*, Lendemer et al. 785.
- Phaeophyscia adiastola* (Esslinger) Esslinger – NJ-AHF, on cement, Lendemer 1747 & Moody, Lendemer 1756 & Moody; PA-HRSPII, on bryophytes over rock, Lendemer 1558 & Rhoads\*, Lendemer 1576 & Rhoads\*.
- Phaeophyscia cernohorskyyi* (Návorník) Esslinger – PA-HRSPII, on rock, Lendemer 1588 & Rhoads\*.
- Phaeophyscia rubropulchra* (Degelius) Esslinger – NJ-AHF, on *Quercus*, Lendemer 1738 & Moody; NJ-BSE, on *Acer*, Lendemer et al. 790; NJ-BSW, on *Quercus*, Lendemer et al. 765, Lendemer et al. 823; NJ-HPII, on *Betula*, Lendemer 1482 & Rhoads; NJ-ORP, on *Acer*, Lendemer 1181 & Moody, Lendemer 1186 & Moody; NJ-SWBAT, on *Juniperus*, Lendemer et al. 1441; NJ-W, on *Quercus*, Lendemer et al. 1000, Lendemer et al. 1001, Lendemer et al. 1002; PA-DCG, on *Betula*, Lendemer 1284 & Rhoads; PA-LHII, on *Betula*, Lendemer 1482 & Rhoads, Lendemer 1654 & Rhoads; PA-MRG, on bark, Lendemer 843 & Tripp; PA-MRGII, on *Betula*, Lendemer 1505 & Rhoads; PA-NCPI, on *Quercus*, Lendemer 1702 & McCordell; PA-SR, on *Quercus*, Lendemer 1495 & Rhoads, Lendemer 1516 & Rhoads.
- Physcia adscendens* (Fries) Oliver – PA-HRSPII, on *Populus grandidentata*, Lendemer 1554 & Rhoads, Lendemer 1570 & Rhoads.
- Physcia americana* G. Merrill – NJ-BAT, on *Quercus*, Lendemer 835 & Smith; NJ-EBW, on *Quercus*, Lendemer et al. 782.
- Physcia millegrana* Degelius – NJ-AHF, on *Quercus*, Lendemer 1739 & Moody; NJ-HP, on *Quercus*, Lendemer et al. 1445; NJ-LBI, on *Juniperus virginiana*, Lendemer 1795 & Joneson, Lendemer 1798 & Joneson, Lendemer 1802 & Joneson; NJ-T, on *Acer*, Lendemer 614 & Moore;
- Physcia stellaris* (L.) Nylander – NJ-BAT, on *Quercus*, Lendemer 834 & Smith; NJ-BSW, on *Quercus*, Lendemer et al. 771; NJ-HP, on *Quercus*, Lendemer et al. 1446; PA-MRGII, on *Quercus*, Lendemer 1494 & Rhoads; PA-NCPI, on bark, Lendemer 1693 & McCordell.
- Physcia subtilis* Degelius – PA-DCG, on rock, Lendemer 1257 & Rhoads; PA-LHIII, on rock, Lendemer 1513 & Rhoads.
- Physciella chlorantha* (Acharius) Esslinger – NJ-AHF, on cement, Lendemer 1746 & Moody, Lendemer 1748 & Moody; PA-NCPII, on cement, Lendemer 1686 & McCordell.
- Placidium laciniatum* var. *atrans* Breuss ined. – MD-P, on soil, Lendemer 867\*.
- Placynthiella* sp. – NJ-C, on *Chamaecyperis thyoides*, Lendemer et al. 1117.
- Placynthiella icmalea* (Acharius) Coppins & P. James – NJ-HP, on sandy soil, Lendemer et al. 1074.
- Placynthiella oligotropha* (J.R. Laundon) Coppins & P. James – NJ-AQB, on sandy soil, Lendemer 979 & Smith; NJ-BAT, on sandy soil, Lendemer 839 & Smith; NJ-MRB, on sandy soil, Lendemer et al. 644; NJ-QBN, on sandy soil, Lendemer 976 & Smith, Lendemer 977 & Smith; PA-LHII, on lignum, Lendemer 1460 & Rhoads (fertile).
- Placynthiella uliginosa* (Schrader) Coppins & P. James – NJ-LBI, on sand, Lendemer 1794 & Joneson; NJ-MAN, on sandy soil, Lendemer et al. 1043; NJ-MRB, on sandy soil, Lendemer et al. 643; NJ-PM, on sandy soil, Lendemer et al. 1008; NJ-QBN, on sandy soil, Lendemer 977 & Smith; NJ-U, on sandy soil, Lendemer et al. 1044, Lendemer et al. 1045, Lendemer et al. 1046.
- Platismatia tuckermanii* (Oakes) Culberson & C. Culberson – NJ-QB, on hardwoods, Lendemer 651 & Tripp.
- Polysporina simplex* (Davies) Vězda – PA-HRSPII, on rock, Lendemer 1586 & Rhoads, lichenicolous on *Acarospora fuscata*, Lendemer 1587 & Rhoads.
- Porpidia albocaerulescens* (?) sorediate morph – PA-DCG, on rock, Lendemer 1306 & Rhoads.  
This collection contains stictic acid by TLC however is too poorly developed to name with certainty (R.C. Harris pers. comm.)
- Porpidia albocaerulescens* (Wulfen) Hertel & Knoph – PA-MRG, on rock, Lendemer 862 & Tripp; PA-NCPII, on gneiss, Lendemer 1708 & McCordell.
- Porpidia crustulata* (Acharius) Hale & W.L. Culberson – NJ-ORP, on rock, Lendemer 1253 & Moody; PA-HR, on pebbles, Lendemer 468 & Smith.

- Porpidia tahawasiana* Gowan – PA-DCG, on rock, Lendemer 1304 & Rhoads\*.  
*Pseudevernia consocians* (Vainio) Hale & Culberson – PA-HSP, on conifer bark, Lendemer 327 & Lendemer.  
*Punctelia rufecta* (Acharius) Krog – NJ-AHF, on *Quercus*, Lendemer 1742 & Moody, Lendemer 1743 & Moody; NJ-BSW, on *Magnolia*, Lendemer et al. 787; NJ-EBW, on *Quercus*, Lendemer et al. 766; NJ-MAN, on *P. rigida*, Lendemer 530 & Smith; NJ-MS, on *Quercus*, Lendemer et al. 636; NJ-AQB, on *Quercus*, Lendemer 951 & Smith, Lendemer 952 & Smith; PA-NCPI, on *Quercus*, Lendemer 1692 & McCordell; PA-SR, on *Acer*, Lendemer 1515 & Rhoads.
- Punctelia subrufecta* auct. Amer. – NJ-AHF, on *Pinus*, Lendemer 1741 & Moody; NJ-HP, on *Vaccinium*, Lendemer et al. 1076, on *Quercus*, Lendemer et al. 1077; NJ-MAN, on *P. rigida*, Lendemer 532 & Smith; NJ-MS, on *Pinus rigida*, Lendemer et al. 629; NJ-PM, on *Quercus*, Lendemer et al. 991, on *P. rigida*, Lendemer et al. 985; NJ-QB, on *Pinus*, Lendemer 656 & Tripp; PA-DCG, on *Quercus*, Lendemer 1287 & Rhoads; PA-HRSPII, on bark, Lendemer 1574 & Rhoads; PA-MRGII, on *Quercus*, Lendemer 1496 & Rhoads; PA-NCPI, on *Malus*, Lendemer 1678 & McCordell, on *Pinus*, Lendemer 1680 & McCordell.
- Pycnothelia papillaria* Dufour – NJ-B, on soil, Lendemer 446 & Smith; NJ-BSE, on soil, Lendemer et al. 857; NJ-ORP, on sandy soil, Lendemer 1204 & Moody; PA-GO, on soil, Lendemer 483 & Smith; PA-HRSPII, on soil, Lendemer 1546 & Rhoads.
- Pyrenula pseudobufonia* (Rehm) R.C. Harris – NJ-MAN, on *Quercus*, Lendemer 526 & Smith; NJ-MS, on bark, Lendemer et al. 624; NJ-W, on *Quercus*, Lendemer et al. 999.
- Pyrrhospora* sp. – NJ-BSE, on *Acer rubrum*, Lendemer et al. 1537, on bark, Lendemer et al. 1594.
- The specimens cited here represent the blue-pruinose form of *Pyrrhospora varians* (Acharius) R.C. Harris. I have chosen to refrain from lumping them into *P. varians* because the species is poorly understood and the possibility exists that one or more taxa could be segregated from *P. varians* as currently defined. The blue pruinose form (at least in New Jersey) is confined to the inner portions of Bear Swamp, which differs significantly from the pine barrens localities where “typical” *P. varians* (i.e. epruinose brown apothecia with a granular thallus) is found.
- Pyrrhospora varians* (Acharius) R.C. Harris s. lat. – NJ-BSE, on shrubs, Lendemer et al. 858; NJ-BSW, on *Pinus*, Lendemer et al. 769; NJ-BSW, on *Quercus*, Lendemer et al. 776; NJ-HP, on *Pinus*, Lendemer et al. 1068, on shrub, Lendemer et al. 1471; NJ-LBI, on twig, Lendemer 1806 & Joneson; NJ-MS, on *Pinus*, Lendemer et al. 630; NJ-ORP, on *Vaccinium*, Lendemer 1289 & Moody; NJ-PC, on small twigs, Lendemer 528 & Moore; NJ-PM, on *Vaccinium*, Lendemer et al. 990; NJ-PN, on bark, Lendemer 623 & Moore.
- Pyxine soreciata* (Acharius) Montagne – NJ-QB, on *Quercus*, Lendemer 653 & Tripp, Lendemer 955 & Smith; NJ-W, on *Quercus*, Lendemer et al. 1003.
- A collection from Delaware County, PA (*Kaiser s.n.*, PH) reported by McGrath (1991) as *Physconia distorta* (With.) J.R. Laundon, belongs here as the pigmentation of the medulla is not present in the soralia but, rather throughout the entire medulla. Also, the medulla is KOH- and the underside black nearly to the lobe tips.
- Pyxine subcinerea* Stirton – PA-NCPI, on *Malus*, Lendemer 1681 & McCordell.
- Rhizocarpon reductum* Th. Fries – PA-LHIII, on rock, Lendemer 1489 & Rhoads\*, Lendemer 1493 & Rhoads\*; PA-LHIV, on rock, Lendemer 1490 & Rhoads\*.
- Rhizocarpon rubescens* Th. Fries – PA-HRSPII, on rock, Lendemer 1568 & Rhoads\*.
- Rhizocarpon sylvaticum* f. *infernulum* Fryday – PA-DCG, on rock, Lendemer 1303 & Rhoads\*.
- Rimelia reticulata* (Taylor) Hale & Fletcher – NJ-BSE, on *Acer rubrum*, Lendemer et al. 1529; NJ-BSW, on *Quercus*, Lendemer et al. 762; NJ-C, on *Quercus*, Lendemer et al. 1108; NJ-HP, on *Quercus*, Lendemer et al. 1061; NJ-ORP, on *Acer*, Lendemer 1179 & Moody, Lendemer 1198 & Moody; NJ-PM, on *Quercus*, Lendemer et al. 1009; NJ-QB, on bark, Lendemer 963 & Smith.
- Rimelia subisidiosa* (Müll. Arg.) Hale & Fletcher – NJ-AQB, on *Quercus*, Lendemer 960 & Smith\*; NJ-LBI, on bark, Lendemer 1800 & Joneson\*.
- Rinodina* sp. nov.(?) – PA-LHII, on *Quercus*, Lendemer 1461p.p. & Rhoads.
- Rinodina degeliana* Coppins – PA-DCG, on *Betula*, Lendemer 1296 & Rhoads\*.
- Rinodina efflorescens* Malme – PA-LHII, on *Quercus*, Lendemer 1461p.p. & Rhoads\*.
- Rinodina maculans* Müll. Arg.(Syn. *R. applanata* Magnusson fide J.W. Sheard) – NJ-BSW, on *Quercus*, Lendemer et al. 778; NJ-HP, on *Quercus*, Lendemer et al. 1065, Lendemer et al. 1484; NJ-LBI, on *Juniperus virginiana*, Lendemer 1793 & Joneson; NJ-T, on *Acer*, Lendemer 618 & Moore; NJ-W, on *Quercus*, Lendemer et al. 1006.
- Rinodina metaboliza* Vainio – PA-HRSPII, on *Populus grandidentata*, Lendemer 1566 & Rhoads\*.
- Rinodina subminuta* H. Magnusson – NJ-SWBAT, on *Quercus*, Lendemer et al. 1483.
- Rinodina vezdae* Mayrhofer – MD-PB, on rock, Lendemer 314; PA-SB, on rock, Lendemer et al. 1422\*.

- Sarcogyne regularis* Körber – NJ-AHF, on mortar, *Lendemer* 1726 & Moody; *Lendemer* 1751 & Moody; NJ-C, on oyster shell, *Lendemer* et al. 1111, on mortar, *Lendemer* et al. 1110, *Lendemer* et al. 1112; NJ-U, on cement, *Lendemer* et al. 1031.
- Schismatomma glaucescens* (Nylander ex Willey) R.C. Harris – NJ-BSE, on *Quercus*, *Lendemer* et al. 1531.
- Scoliciosporum chlorococcum* (Stenhammar) Vězda– NJ-BSE, on *Pinus rigida*, *Lendemer* et al. 1658; NJ-HP, on *Pinus*, *Lendemer* et al. 1067; PA-DCG, on bark, *Lendemer* 1466 & Rhoads.
- Scoliciosporum umbrinum* (Acharius) Arnold – MD-P, on rock, *Lendemer* 888; PA-DCH, on rock, *Lendemer* 1300 & Rhoads; PA-HRSPII, on rock, *Lendemer* 1650 & Rhoads.
- Thelotrema subtile* Tuckerman – NJ-BSW, on *Magnolia virginiana*, *Lendemer* et al. 821\*.
- Trapelia* sp. – NJ-BSE, on rock, *Lendemer* et al. 1522; NJ-ORP, on rock, *Lendemer* 1208 & Moody; *Lendemer* 1209 & Moody.
- Trapelia placodiooides* Coppins & P. James – PA-NCPI, on rock, *Lendemer* 1703 & McCandell\*, *Lendemer* 1704 & McCandell\*.
- Trapeliopsis* sp.(?) – PA-HRSPII, on rock, *Lendemer* 1579 & Rhoads.
- Trapeliopsis flexuosa* (Fries) Coppins & P. James – NJ-A, on wood, *Lendemer* 956 & Smith; NJ-C, on *Pinus rigida*, *Lendemer* et al. 1103; NJ-HP, on *Vaccinium*, *Lendemer* et al. 1611; NJ-PM, on *Pinus rigida*, *Lendemer* et al. 996; PA-HRSPII, on *Cladonia* & lignum, *Lendemer* 1556 & Rhoads, *Lendemer* 1572 & Rhoads; PA-NCPI, on lignum, *Lendemer* 1701 & McCandell.
- Trapeliopsis granulosa* (Hoffmann) Lumbsch – PA-HRSPII, on lignum, *Lendemer* 1562 & Rhoads.
- Trapeliopsis viridescens* (Schrader) Coppins & P. James – PA-DCG, on lignum, *Lendemer* 1663 & Rhoads.
- Trichothelium cestrensis* (Tuckerman ex Michener in Darlington) R.C. Harris – NJ-BSE, on *Acer*, *Lendemer* et al. 794; NJ-LL, on *Ilex*, *Lendemer* et al. 786.
- Trichothelium guntheri* (Flotow) R.C. Harris – PA-NCPII, on gneiss, *Lendemer* 1688 & McCandell\*.
- Trypethelium virens* Tuckerman ex Michener in Darlington – NJ-BSE, on soft bark, *Lendemer* 503 & Moore; NJ-BSW, on *Ilex*, *Lendemer* et al. 770; NJ-LL, on *Ilex*, *Lendemer* et al. 783; NJ-MS, on bark, *Lendemer* et al. 631.
- Tuckermanella fendleri* (Tuckerman) Esslinger – NJ-AHF, on *Pinus*, *Lendemer* 1736 & Moody; NJ-HP, on *Vaccinium*, *Lendemer* et al. 1450; NJ-MAN, on *P. rigida*, *Lendemer* 513 & Moore; NJ-PC, on small twigs, *Lendemer* 517 & Moore; NJ-PM, on *P. rigida*, *Lendemer* et al. 992.
- Tuckermannopsis americana* (Sprengel) Hale – NJ-MAN, on *P. rigida*, *Lendemer* 509 & Moore.
- Tuckermannopsis ciliaris* (Acharius) Hale – NJ-MAN, on *P. rigida*, *Lendemer* 510 & Moore.
- Umbilicaria mammulata* (Acharius) Tuckerman – PA-GO, on rock, *Lendemer* 480 & Smith; PA-P, on rock, *Lendemer* 470 & Smith; PA-HM, on shaded rocks, *Lendemer* 367 & Smith.
- Umbilicaria muhlenbergii* (Acharius) Tuckerman – PA-GO, on shaded wet rock, *Lendemer* 489 & Smith.
- Usnea strigosa* ssp. *major* (Michaux) I.I. Tavares – NJ-BSE, on bark, *Lendemer* et al. 868; NJ-BSW, on *Quercus*, *Lendemer* 519 & Moore, *Lendemer* 520 & Moore; NJ-BRK, on bark, *Lendemer* et al. 461, 462, 463; NJ-HP, on *Quercus*, *Lendemer* et al. 1086; NJ-MAN, on *Quercus*, *Lendemer* 514 & Moore.
- Usnea mutabilis* Stirton – NJ-BSE, on *Acer rubrum*, *Lendemer* et al. 815.
- Usnea trichodea* Acharius – NJ-QB, on *Chamaecyperus thyoides*, *Lendemer* 650 & Tripp.
- Verrucaria* spp. – PA-DCG, on rock, *Lendemer* 1293 & Rhoads; PA-NCPI, on rock, *Lendemer* 1709 & McCandell; PA-SB, on rock, *Lendemer* et al. 1421.
- Verrucaria calkinsiana* Servit – NJ-U, on cement, *Lendemer* 1029 & Rhoads; PA-DCG, on rock, *Lendemer* 1302 & Rhoads\*.
- Vězdaea leprosa* (P. James) Vězda– PA-SL, on rock, *Lendemer* et al. 1364\*.
- Vulpicida viridis* (Schweinitz ex Halsey) Matteson & Lai – NJ-QB, on *Chamaecyperus thyoides*, *Lendemer* 652 & Tripp.
- Xanthoparmelia conspersa* (Ehrhart ex Acharius) Hale – PA-DCG, on rock, *Lendemer* 1879 & Rhoads, *Lendemer* 1280 & Rhoads, *Lendemer* 1282 & Rhoads, *Lendemer* 1283 & Rhoads; PA-GO, on rock, *Lendemer* 479 & Smith; PA-HRSPII, on rock, *Lendemer* 1653 & Rhoads; PA-LHIII, on rock, *Lendemer* 1504 & Rhoads; PA-MRG, on rock, *Lendemer* 848 & Tripp.
- Xanthoparmelia cumberlandia* (Gyelnik) Hale – PA-HRSPII, on rock, *Lendemer* 1580 & Rhoads.
- Xanthoparmelia plittii* (Gyelnik) Hale – PA-HRSPII, on rock, *Lendemer* 1583 & Rhoads.
- Xanthoparmelia somloënsis* (Gyelnik) Hale – MD-P, on rock, *Lendemer* 853, *Lendemer* 854.
- McGrath (1991) reported *X. plittii* (Gyelnik) Hale, from a number of counties in Pennsylvania. Though it is likely that Mason Hale's cited collections represent *X. plittii* the specimens cited from Chester county likely all represent *X. somloënsis*. I have examined two George Kaiser specimens at PH that were cited by McGrath and both represent *X. somloënsis*. I have not yet found any species other than *X. somloënsis* in the serpentine barrens of the region.

*Xanthoria fulva* (Hoffmann) Poelt & Petutschnig – NJ-BAT, on *Chamaecyparis thyoides*, Lendemer 838 & Smith; NJ-T, on *Acer*, Lendemer 613 & Moore.  
sterile sorediate crustose sp. 1 (TLC: atranorin + caperatic acid?) – NJ-BSE, on *Quercus*, Lendemer et al. 1524, Lendemer et al. 1530.  
sterile sorediate crustose sp. 2 – NJ-BSE, on *Quercus*, Lendemer et al. 1525.  
sterile sorediate crustose sp. 3 (TLC: chloratranorin + fatty acid) – NJ-ORP, on *Acer*, Lendemer 1216 & Moody (BG, MIN, NY, PH).  
sterile sorediate crustose sp. 5 (TLC: perlatolic group unkown) – PA-DCG, on *Betula*, Lendemer 1285 & Rhoads, Lendemer 1607 & Rhoads, Lendemer 1609 & Rhoads.  
sterile sorediate crustose sp. 7 (TLC: atranorin, unknowns, caperatic acid(?), fumarprotocetraric acid(?) trace) – NJ-ORP, on *Vaccinium*, Lendemer 1193 & Moody.

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# A Preliminary Study of *Acarospora smaragdula* var. *lesdainii* in California

KERRY KNUDSEN<sup>1</sup>

**ABSTRACT.** – The current state of *Acarospora* studies is discussed. *Acarospora hassei* Herre and *Acarospora particularis* H. Magnusson are placed in synonymy with *Acarospora smaragdula* var. *lesdainii* (Harmand in A.L. Smith) H. Magnusson. A lectotype is selected for *A. hassei* Herre.

## INTRODUCTION

*Acarospora* is a successful global genus including many species with intercontinental distributions. This success is attributable to two major characteristics. The first is extreme genetic variability. A single species may show variation in almost all of its characteristics allowing *Acarosporas* to respond to selective pressures and establish populations in harsh microhabitats such as western exposures or on felsenmeers (the chaotic pile of rocks on a summit). The second is phenotypic plasticity in response to environmental pressures. The identification of *Acarospora* species demands knowing the lichen's gestalt as well as finding the few characteristics that are relatively unvarying. The ontogeny of the thallus must be taken into consideration as well as the ecological dimension. This is generally true of many genera, however, like *Caloplaca*, *Acarospora* has a very simple *bauplan* honed by evolution which makes the genus equally difficult.

The history of the study of *Acarospora* in North America in the 20<sup>th</sup> century is dominated by the two eminent lichenologists H. Magnusson and W. Weber.

Magnusson studied nearly every available specimen from North America during the 1920's while writing his world monograph on the genus (Magnusson, 1929). He continued to publish on *Acarospora* from North America throughout the rest of his career and named many new species in numerous papers and two supplements to his monograph.

Magnusson's species concept predated the Modern Synthesis. He lacked an understanding of genetic variability and its relation to speciation in the evolutionary process. He is also considered a "splitter" by many lichenologists. Magnusson was meticulous in the measurement of *Acarospora* morphology. His formation of taxa was mathematical. His species concept generally did not allow for a flexible and natural range of variation caused either by genetic variability or environmental modification. His propensity to name species from single and even meager collections only served to reinforce this phenetic formalism.

Magnusson's systematic perspective led to the description of approximately fifty-eight new taxa from North America. Any revision of the genus needs to critically examine the holotypes of his taxa and in many cases the only record of these species is the holotype. Unfortunately, specimens determined by American lichenologists using his descriptions are often incorrect when compared to the types.

In response to Magnusson's treatments William Weber attempted to revise the genus. To his credit he had an understanding of the environmental factors influencing lichen phenotypes. In his major publication, "A taxonomic revision of *Acarospora*, subgenus *Xanthothallia*" (Weber, 1968), he attributed all diversity in the genus *primarily* to environmental modification. Applying this principle to *Acarospora* subgenus *Xanthothallia* he reduced 64 species of yellow *Acarospora* into synonymy with *A. scheicheri* A. Massalongo. Poelt immediately led an offensive against Weber's reductionism and was joined by Culberson (among others) in the United States (W. Weber, pers. comm.). While his revision was not accepted in continental Europe, American lichenologists in general accepted his revision, feeling an exhilarating freedom from the difficulties of Magnusson's approach. Nonetheless, the opposition against Weber prevailed and convinced (or prevented) him from publishing his revision of *Acarospora* subgenus *Phaeothallia* which would have led to the reduction of an equally large number of species into synonymy with *A. smaragdula* and *A. fuscata* (anonymous, pers.

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comm.) Undaunted at the time and recognized in the lichenological community after Magnusson's death as a world expert on *Acarospora*, Weber continued to annotate thousands of specimens, most as *A. fuscata*, *A. schelicheri*, and *A. smaragdula*. Many older taxa are thus difficult to find in herbaria because they have been re-filed under these three names.

The fundamental error of Weber's treatment was to base his taxonomy on the principle that environmental modification is the primary cause of *Acarospora* diversity. The effect of this *a priori* principle is to reduce the complexity of biodiversity, the phylogenetic tree of the genus, to a diversity of forms and *not* of genotypes and lineages. Thus biodiversity becomes only an appearance hiding an *essential* unity. This treatment had the effect of emptying the taxa *A. fuscata*, *A. schelicheri*, and *A. smaragdula* of any biological reality and turning them into metaphysical entities of an idealistic monism. Weber was correct in stating his approach was philosophical (Weber, 1970). It is easy to recognize in the 21<sup>st</sup> century, however, that his philosophy is implicitly anti-evolutionary. The real effect of Weber's approach was to polarize the study of *Acarospora*. In his reaction to Magnusson's excesses as a "splitter" he became the archetypal "lumper." Between these two extremes the study of *Acarospora* has been plunged into chaos and confusion.

J.W. Thomson, in his annotations and his revision of the genus in his Arctic flora (Thomson, 1997), stands out as an example showing that the correct approach to the taxonomy of the genus is one of taxonomic decisions based on rationality grounded in observation of the organism. Attempting to follow Thomson's example, I have begun a revision of *Acarospora* in California and am working on *Acarospora* subgenus *Phaeothallia* for the Sonoran Flora. The following study came out of an attempt to revise *Acarospora smaragdula* as well as *A. hassei* and *A. particularis*. It is the third of a series of studies of *Acarospora* taxa. (Knudsen, 2003; Lendemer, in press)

## TAXONOMIC TREATMENT

### *Acarospora smaragdula* var. *lesdainii* (Harmand in A.L. Smith) H. Magnusson

*Acarospora lesdainii* Harmand in A.L. Smith, Monogr. Brit. Lich., ed. 2, 1: 344-345. TYPE: no type designated in protologue.

*Acarospora smaragdula* var. *lesdainii* (Harmand in A.L. Smith) H. Magnusson, Kungl. Sv. Vet. Akademiens Handlingar, ser. 3, 7(4): 144-145, 1929.

*Acarospora hassei* Herre, Proc. Washingt. Acad. Sci., 12: 128. 1910. TYPE: On sandstone at 3000 ft., Castle Rock, Santa Cruz Mountains, California, USA. A. Herre 757 (FH! (packet labeled by Herre), lectotype (**designated here!**); FH!, isolectotype; FH! paralectotypes<sup>2</sup>).

Syn. nov. *Acarospora particularis* H. Magnusson, Kungl. Sv. Vet. Akademiens Handlingar, 7(4):178, 1929.  
TYPE: San Bernardino Mountains, California, USA at 270 meters. *H.E. Hasse s.n.* (W!, holotype).

Magnusson (1929) made *Acarospora lesdainii* Harmand in A.L. Smith a variety of *Acarospora smaragdula* (Wahlenberg) Th. Fries. The taxon intergrades with European specimens of *A. smaragdula* and occurs within the circumpolar range of *A. smaragdula*. *A. smaragdula* var. *lesdainii* differs from many European specimens of *A. smaragdula* in having an uneven cortex, rough disc, and generally KOH- reaction. It does not, however, differ in cortical or hymenial detail, fitting easily into the range of variation. It is reported in Europe as often growing in "sheltered places under over hanging rocks" (Magnusson, 1929) thus it appears to have different microhabitat requirements than *A. smaragdula* var. *smaragdula* (which prefers open situations in temperate climates), but this needs further investigation.

It is also possible that its distribution pattern may not be co-extensive with *A. smaragdula* var. *smaragdula* but rather nested within it. Populations in California south of San Francisco occur within the hypermarine zone and are chasmolithic with large crystals of the substrate becoming embedded in the thallus. Purvis et al. (1992) and Thomson (1997) treated var. *lesdainii* as synonymous with var. *smaragdula*, however, until there is a modern revision of *A. smaragdula*, I believe that the varietal status proposed by Magnusson (1929) should be retained.

In his description of *A. hassei*, Herre (1910) wrote that it was "quite different from any *Acarospora* I have been able to examine." Those who have not seen European or Arctic specimens of *A. smaragdula* or *A. smaragdula* var. *lesdainii* would be surprised by how much they differ from the many specimens one can find in packets marked *A. smaragdula* in American herbaria. When compared to Magnusson's specimens of var. *lesdainii* from Sweden, there is no significant difference. Magnusson (1929) already placed *A. hassei* in

<sup>2</sup> A. Herre 750 – Two packets in FH collected at the type locality on the same date as the type, but given a different collection number by Herre.

synonymy with *A. smaragdula* var. *lesdainii*, but some confusion about this taxon within the United States remains. Fink (1935) and Esslinger (1997) maintained *A. hassei* as a valid species as does the Catalog of California Lichens (Tucker and Jordan, 1978). The synonymy proposed by Magnusson (1929) is confirmed here and the name should be considered a synonym of *A. smaragdula* var. *lesdainii*.

As with many taxa, Magnusson (1929) named *A. particularis* from a single collection made by H. E. Hasse in the San Bernardino Mountains of Southern California at 270 meters. The verruca or squamules of the type of *A. particularis* are small, less than 0.5mm on an average, dirty brown with blackish apothecia, and growing on sandstone or crumbling granite (the crystals in the substrate easily separate). Magnusson justified naming this species on two grounds: its blackish apothecia and its thin cortex that is one to three cells thick.

The cortex of the type does appear thin, merely one to three layers of rounded cells ca.(2-)3(-6) $\mu$ m in diameter that are heavily pigmented. The vertical hyphae which form the cortex rise through a poorly-developed algal layer, but can be seen at 1000x (Magnusson used 400x in general (Magnusson, 1929)). In the type specimen the lower cortical cells are not developed or are poorly developed within the hyphae below the top one or three cells. The actual cortical layer is closer to 30 $\mu$ m in the most developed areas and below the top layer is opaque prosoplectenchyma. This opaqueness is not unusual in *Acarosporas* that usually have lower layers with distinct cortical cells.

The apothecia do appear black to the naked eye and at 10x. However, at higher magnification (40x) with bright light the apothecia are reddish-brown, rough, and immediately recognizable as *A. smaragdula* var. *lesdainii*. The hymenium is the same as *A. smaragdula* var. *lesdainii* with paraphyses ca. 1.7 $\mu$ . thick and with the upper part of the paraphyses short segmented. The hymenial height, asci, and ascospores do not differ either. *A. smaragdula* var. *smaragdula* and *A. smaragdula* var. *lesdainii* generally have hyphal bundles penetrating the algal layer. This feature is lacking in the type of *A. particularis* and the algal layer (as well as the medulla) is poorly developed. The squamules are less than the normal 1-2 mm. range of var. *smaragdula* and var. *lesdainii*.

The poor development of the algal layer and medulla is due to environmental causes. The substrate of the type of *A. particularis* is extremely weak, crumbly, and is eroding faster than the *Acarospora* could have grown. This effect is often seen in chasmolithic lichens such as the common Sonoran lichen *Buellia sequax* (Nylander) Zahlbruckner, which appears to have a solid white thallus when growing between the crystals and particles of stable, flat substrates. But, for instance, when growing on a decaying pegmatite dike the thallus of *B. sequax* is reduced to small white clumps and black apothecia. Also, Hasse collected the type specimen from a relictual population stranded approximately seventy miles inland from the sea at a low and very arid elevation in the chaparral belt. Such relictual populations of lichens are common in Southern California which has been growing steadily more arid over the last ten thousand years during the current interglacial period (Axelrod, 1966; Pielou, 1991). I have seen thalli of *Letharia columbiana* (Nuttall) J.W. Thomson at the same elevation in arid Southern California and they are always less than two centimeters tall. *Usnea hirta* (L.) Wigg is also found dwarfed at same elevation. The aridity of this inland elevation in Southern California equally limits crusts that usually thrive in the hypermarine belt or at higher elevations.

*A. particularis* is a synonym of *Acarospora smaragdula* var. *lesdainii*. *Acarospora smaragdula* var. *lesdainii* is rare in California and I have so far seen no other collections of the species except those cited as types above and those cited below.

Selected specimens examined: SWEDEN. Bohuslän: Par. Ödsmål, Starrkär. Under overhanging loose rocks with *Lecanora tristcolor*, A.H. Magnusson s.n. = *Lichenes selecti scandinavici exsiccati*, No. 132, 9.September.1930 (H); Stenkyrka, Djupvick. Rock on shore. A.H. Magnusson 505170, 29.June.1923 (ASU). USA: California: Castro Crest, Los Angeles Co., Santa Monica Mountains. Sandstone outcrop in sun, Lat. 34° 04.840'N Long. 118° 45.136'W, elev. 655 m., K. Knudsen #707 & T. Sagar (herb. Knudsen); north side of sandstone outcrop, same location as Knudsen 707, K. Knudsen #709 & T. Sagar (herb. Lendemer, FH, H, SBBG, UCR).

## CONCLUSION

As can be seen in this modest revision, the study of *Acarospora* must transcend the limitations of Magnusson and Weber. Magnusson's careful observation of specimens, freed from the typological and formalistic tendencies of his age, coupled with a keen awareness of genetic variability is still a fruitful approach. Weber's awareness of environmental modification, freed from his philosophical framework, is likewise indispensable to understanding the genus. This cannot be accomplished without including as much field observations as are possible in one's investigations. As can be seen by the problems of naming *A. hassei* and *A. particularis* from single collections progress in the reformation of the study of *Acarosporas* in North America includes both bringing reality back to taxa like *A. smaragdula* and *A. fuscata* as well as critically

reviewing all *Acarospora* taxa using type specimens. Type specimens cannot, however, be relied upon alone and as many specimens as can be observed must be included in the process of revision. Eventually as our understanding of *Acarospora* becomes clearer molecular studies can be integrated into the study of the genus to increase our understanding of *Acarospora*'s evolutionary history.

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# Lichens of Eastern North America Exsiccati. Fascicle II, nos. 51-100

JAMES C. LENDEMER<sup>1</sup>

**ABSTRACT.** – In conjunction with the author's work on the lichen flora of eastern North America the author began the distribution of this exsiccat (Lichens of Eastern North America Exsiccati) from the Academy of Natural Sciences of Philadelphia (PH). This, the second fascicle in the series, comprises nos. 51 to 100 and is distributed in 20 sets on exchange to the following herbaria: ASU, B, BG, CANB, CBM, CHR, DOV, FH, GZU, H, HMAS, M, MIN, NDA, S, TSB, TNS, TU, UPS, herb. Lendemer. A new combination, *Biatora longispora* (Degelius) Lendemer & Printzen, is proposed and, *Usnea pensylvanica* Motyka is removed from synonymy with *U. rubicunda* Stirton.

## INTRODUCTION

This, the second fascicle of the *Lichens of Eastern North America Exsiccati* was originally intended to focus on the crustose lichens of southern New Jersey; however, many non-crustose taxa from elsewhere are also included because of opportunities to collect them in the quantity needed. Several species that were included in fascicle I (Lendemer, 2002) are included here again; however, for the most part, the taxa are different. Arrangement and distribution of this fascicle follows that of the first fascicle (Lendemer, 2002). When more than 20 duplicates were produced the first two have been retained in hb. Lendemer to form incomplete sets that are available upon request and any further duplicates have been sent to the Lichen Exchange of American Bryological and Lichenological Society currently maintained at ASU.

It is of particular importance to note that the author citations of taxa presented here do not always follow standard lists such as Esslinger (1997). Differences between those given here and such "standard" lists often reflect the personal preferences of the preparator, however, in several cases, bibliographic research has revealed that the authorities should be changed. As in Harris (1990) and Lendemer and Hewitt (2002), these changes usually only affect the addition of an "ex" or an "in" which though not required by the *International Code for Botanical Nomenclature* (Greuter et al., 2000) does provide helpful information and clarity. It should also be noted that the taxonomy presented here does not always follow previously accepted treatments and instead reflects the views of the preparator as well as those of the specialists consulted. In particular, differences in the taxonomy of the *Usnea* species included here are the result of my research in the genus.

## FASCICLE II

### 51. *Endocarpon pallidulum* (Nylander) Nylander Dup. Determined (W!) – O. Breuss – October 25, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. ATLANTIC COUNTY.:** On the shaded portions of discarded concrete, on the margins of an abandoned blueberry (*Vaccinium*) farm and a mixed hardwood forest, 1/3 mile south of NJ Route #561, northeast of Germania, southeast of Egg Harbor City, Nature Conservancy Reserve. – elev. ca. 60 ft. – UTM 18 535529E 4372107N - Lat. 39° 29' 59"N, Long. 74° 35' 12"W – Assoc. spp.: *Acarospora* sp., *Sarcogyne regularis*, *Caloplaca* sp.

Thallus saxicolous, squamulose, esorediate; squamules small, brown, overlapping; medulla white; periphyses not distinctly branched, segmented, not swollen apically; asci 44µm x 24µm; spores 2-per ascus, brown, muriform, obtuse ellipsoid, 30µm x 14µm.

James C. Lendemer *et al.* #1075  
w/ James A. Macklin, Alfred E. Schuyler *et al.*

July 20, 2003

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**52. *Cladonia subtenuis* (Abbeyes) A. Evans**

Det. J.C. Lendemer – December 7, 2002

Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** Growing on organic matter (needles of pitch pine (*Pinus rigida*)), in an open forest of *Pinus* spp. (mainly *P. rigida*) and oak (*Quercus* spp.), on bluffs along the west bank of the Manumuskin River, Nature Conservancy Protection Area, 1.5 miles northeast of Port Elizabeth, west of Manumuskin, southeast of Millville. – elev. <20 ft. - UTM 18 502224E 4353540N – Lat. 39° 20' 00"N, Lat. 74° 58' 27"W – Assoc. spp. – *Cladonia grayi*, *Cladonia caespitica*, *Cladonia atlantica*.

Thallus growing over organic matter, in large bushy tufts, white/blue-gray.

James C. Lendemer #535 & Leonard H. Smith II

December 2, 2002

**53. *Pyrrhospora varians* (Acharius) R.C. Harris**

Dup. Determined (NY!) – R.C. Harris – December 12, 2002

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On small twigs of sheltered shrubs on the east edge of a borrow pit (sand mine), in a small exposed thicket of pitch pine (*Pinus rigida*), oak (*Quercus* spp.), and small shrubs, at the terminus of a small gravel road on the outer edge of the middle portion of Bear Swamp, north of Turkey Point Corner, east of Frames Corner, south of Paynters Crossing. – elev. <20 ft. – ca. UTM 18 488706E 4350217N – Lat. 39° 18' 11"N, Long. 75° 07' 52"W – Assoc. spp. – *Cladonia subtenuis*, *Cladonia atlantica*, *C. cristatella*, *C. grayi*, *Dibaeis baeomyces*, *Usnea strigosa* ssp. *major*, *Tuckermannopsis fendleri*.

Thallus crustose, granular, green, corticolous; apothecia small, clustered, reddish brown to black; spores ca. 8-per ascus. Though Hafellner (1993) excluded this species from his concept *Pyrrhospora*, he did not assign it elsewhere and, it is retained there by Esslinger (1997).

James C. Lendemer #528 & Gerry Moore

November 16, 2002

**54. *Flavoparmelia baltimorensis* (Gyelnik & Fóriß) Hale**

Det. J.C. Lendemer – December 27, 2002

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** Loosely adnate on a large, shaded, granite boulder, in a mid-elevation *Rhododendron* thicket surrounded by a mixed-oak forest (*Quercus* spp.), along Bartram Trail (yellow section), ca. 1 mile from entrance along NC Route 106, Scaly Mountain, Nantahala National Forest. – elev. ca. 4200 ft. – ca. UTM 17 292541E 3878950N – Lat. 35° 02' 01"N, Long. 83° 16' 27"W – Assoc. spp.: *Usnea halei*.

Thallus foliose, yellow-green, loosely attached to substrate, saxicolous; underside black, margins dark to light brown; upperside with many prominent pustulose growths arising from cortex; apothecia present on some specimens (i.e., HB. LENDEMEN); apothecial disks brownish-red to brownish-black.

James C. Lendemer #556 & Leonard H. Smith II

December 22, 2002

**55. *Pseudevernia consocians* (Vainio) Hale & Culberson**

Det. J.C. Lendemer – December 27, 2002

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** On the branches and trunks of old (ca. 400 years), dwarf pitch pines (*Pinus rigida*), on a granite dome, exposed to the wind, north of Sunset Rocks, several hundred yards south of Sunset Park Rd., ca. ½ mile south of NC Route 106, Highlands. – elev. 4020 ft. - UTM 17 300527E 3880337N – Lat. 35° 02' 52"N, Long. 83° 11' 13"W – Assoc. spp.: *Platismatia tuckermanii*, *Usnea merrillii*.

Thallus bluish-gray, isidiate; underside white to blackish-blue; an apotheciate thallus (Lendemer 559 (HB. LENDEMEN)) was also found at this locality.

James C. Lendemer #557 & Leonard H. Smith II

December 24, 2002

**56. *Cladonia caroliniana* Schweinitz ex Tuckerman s. str.**

Det. J.C. Lendemer – December 27, 2002  
Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** Growing with bryophytes and *Cladonia* spp. in crevices and pockets of granite, filled with wet soil on a granite dome exposed to the wind, north of Sunset Rocks, several hundred yards south of Sunset Park Rd., ca. ½ mile south of NC Route 106, Highlands. – elev. 4020 ft. - UTM 17 300527E 3880337N – Lat. 35° 02' 52"N, Long. 83° 11' 13"W – Assoc. ssp.: *Cladonia* spp.

Thallus yellow-green; podetia short, not distinctly lacerated or torn, inflated, with spiny tips; cortex UV-; medulla UV+ blue-white.

James C. Lendemer #558 & Leonard H. Smith II

December 25, 2002

**57. *Usnea merrillii* Motyka**

Det. J.C. Lendemer – December 28, 2002

Dup. Confirmed (UC!) – I.I. Tavares – January 9, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** On the bark and branches of old (ca. 400 years), exposed, dwarf pitch pines (*Pinus rigida*), on the summit of a west facing granite dome, northwest of Sunset Rocks, several hundred yards south of Sunset Park Rd., ca. ½ mile south of NC Route 106, Highlands. – elev. 4020 ft. - UTM 17 300527E 3880337N – Lat. 35° 02' 52"N, Long. 83° 11' 13"W – Assoc. ssp.: *Platismatia tuckermanii*, *Pseudevernia consocians*, *Parmelinopsis horrescens*, *Parmelinopsis spumosa*.

Thallus corticolous, pendent, green to yellow-green, lax; base not distinctly blackened; branches slender, lax, curling at tips, segmented; medulla white, as wide as the axis, KOH+ yellow to red (quickly); axis opaque. This collection is annulate as in the type collection however in the type collection the segments are more inflated and the verrucae more regular and visible (Tavares, pers. comm.).

James C. Lendemer #568 & Leonard H. Smith II

December 25, 2002

**58. *Peltigera neopolydactyla* (Gyelnik) Gyelnik**

Dup. Determined (H!) – Orvo Vitikainen – March 10, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** Growing with moss over sandy soil and rocks, on a roadbank along Sunset Park Rd., ca. ½ mile from NC Route 106, Highlands. – elev. 4000 ft. - UTM 17 300694E 3880581N – Lat. 35° 03' 00"N, Long. 83° 11' 07"W.

Thallus growing over bryophytes and wet rocks, esorediate, apotheciate; apothecia saddle shaped, brown to brown-red; cortex gray, UV+ dull yellow/green; underside with distinct venation, tomentose; veins slightly raised, dark gray to black, otherwise underside pale brown to white; rhizines black to gray, along veins.

James C. Lendemer #569 & Leonard H. Smith II

December 24, 2002

**59. *Cladonia rangiferina* (L.) F. H. Wigg.**

Det. J.C. Lendemer – December 28, 2002

Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** On organic debris over granite, around the bases of old (ca. 400 years), dwarf pitch pines (*Pinus rigida*), on the summit of a west facing granite dome, northwest of Sunset Rocks, several hundred yards south of Sunset Park Rd., ca. ½ mile south of NC Route 106, Highlands. – elev. 4020 ft. - UTM 17 300527E 3880337N – Lat. 35° 02' 52"N, Long. 83° 11' 13"W – Assoc. ssp.: *Cladina arbuscula*, *Cladonia squamosa*, *Cladonia* spp.

Thallus white, forming large mats and bushy cushions, UV-.

James C. Lendemer #571 & Leonard H. Smith II

December 24, 2002

**60. *Cladonia squamosa* Hoffmann**

Det. J.C. Lendemer – December 28, 2002

Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** Growing over organic debris overlaying a small (north facing) granite hillside along Sunset Park Rd., ca. ½ mile from NC Route 106, Highlands. – elev. 4000 ft. - UTM 17 300694E 3880581N – Lat. 35° 03' 00"N, Long. 83° 11' 07"W.

Thallus UV+ blue-white, squamulose; “primary” squamules abundant to sparse; podetia thin and fragile (unlike Lendemer et al. 412 = *Lich. East. N. Amer. Exs. I: 10*).

James C. Lendemer #572 & Leonard H. Smith II

December 24, 2002

**61. *Cladonia arbuscula* (Wallroth) Flotow**

Det. J.C. Lendemer – December 28, 2002

Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** On organic debris over granite, around the bases of old (ca. 400 years), dwarf pitch pines (*Pinus rigida*), on the summit of a west facing granite dome, northwest of Sunset Rocks, several hundred yards south of Sunset Park Rd., ca. ½ mile south of NC Route 106, Highlands. – elev. 4020 ft. - UTM 17 300527E 3880337N – Lat. 35° 02' 52"N, Long. 83° 11' 13"W – Assoc. spp.: *Cladina rangiferina*, *Cladonia squamosa*, *Cladonia* spp.

Thallus forming bushy, sprawling mats, dull yellow when dry, greenish-blue when wet; UV-.

James C. Lendemer #573 & Leonard H. Smith II

December 24, 2002

**62. *Cetraria arenaria* Kärnefelt**

Det. J.C. Lendemer – January 13, 2003

Dup. Confirmed (HB. LENDEMER!) – I. Kärnefelt – January 14, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. JACKSON COUNTY.:** Forming dense mats with bryophytes growing on compact soil and roots overlaying granite on the border of an exposed granitic domes along the northern summit of Whiteside Mountain, in a temperate forest of hemlock (*Tsuga canadensis*), *Rhododendron*, *Azalea*, maple (*Acer* sp.), witch-hazel (*Hamamelis* sp.), chestnut (*Castanea* sp.), and *Sassafras*, along Loop Trail, Whiteside Mountain, Nantahala National Forest, northeast of Highlands. elev. ca. 4460 ft. - UTM 17 304753E 3883750N – Lat. 35° 04' 46"N, Long. 83° 08' 29"W - Assoc. spp.: *Cladonia uncialis*, *Cladonia* spp.

James C. Lendemer #599 & Leonard H. Smith II

December 23, 2002

**63. *Placynthiella uliginosa* (Schrader) Coppins & P. James**

Det. J.C. Lendemer – February 1, 2003

Dup. Confirmed (NY!) – R.C. Harris – March 3, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On disturbed soil with immature mosses and dead vascular plant rosettes, on an exposed bluff overlooking the marshy flats of the Maurice River, west shore of the Morris River, Nature Conservancy Management Area, ca. 1 mile north of Laurel Lake, east of NJ Route 555, southwest of Millville, Dividing Creek Quad. – UTM 18 497190E 4356080N – Lat. 39° 21' 22"N, Long. 75° 01' 57"W – Assoc. spp., *Placynthiella oligotropha* (mixture with).

Thallus terricolous, granular, inconspicuous; apothecia black, biatorine; spores 8-per ascus, colorless, globose to slightly ellipsoid. Most specimens of this collection are a mixture with *P. oligotropha* which has larger, paler, olive areoles.

James C. Lendemer et al. #643

January 24, 2003

w/ James A. Macklin & Gerry Moore

**64. *Xanthoria fulva* (Hoffmann) Poelt & Petutschig**

Det. J.C. Lendemer – January 19, 2003

Dup. Confirmed (BG!) – L. Lindblom – April 14, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the bark of several dead silver maples (*Acer saccharinum*), forming part of an old homestead surrounded by extensive salt

grass flats and marshes, along the east shore of the Maurice River, at the terminus of the paved portion of Thompsons Beach Road, Maurice River Township. - ca. UTM 18 497815E 4342364N - Lat. 39° 13'N, Long. 75° 01'W - Assoc. spp.: *Lecanora* sp, *Pertusaria* sp., *Punctelia rufecta*, *Rinodina maculans*.

Thallus, foliose, orange, sorediate; lobes small, sorediate on the underside of lobe tips; underside white, lacking rhizines.

James C. Lendemer #613 & Gerry Moore

January 18, 2003

**65. *Physcia millegrana* Degelius**

Det. J.C. Lendemer – January 19, 2003

Dup. Confirmed (NDA!) – T.L. Esslinger – February 15, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the bark of several dead silver maples (*Acer saccharinum*), forming part of an old homestead surrounded by extensive salt grass flats and marshes, along the east shore of the Maurice River, at the terminus of the paved portion of Thompsons Beach Road, Maurice River Township. - ca. UTM 18 497815E 4342364N - Lat. 39° 13'N, Long. 75° 01'W - Assoc. spp.: *Candelariella efflorescens*, *Usnea strigosa* ssp. *major* (small, tufted, immature thalli), *Flavoparmelia caperata*.

Thallus foliose, sorediate, apotheciate, gray; lobes small, densely sorediate; apothecia abundant; apothecial disks black-purple, epruinose to pruinose.

James C. Lendemer #614 & Gerry Moore

January 18, 2003

**66. *Lecanora minutella* Nylander**

Det. J.C. Lendemer – January 20, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the exposed edges of the scales of old pitch pine (*Pinus rigida*) cones, in a swampy forest (with *Pinus rigida*, *Liquidambar*, *Populus*, etc.), adjacent to tidal marshes, along the west shore of the Maurice River, at the terminus of Strawberry Lane, Port Norris, Commercial Township. - UTM 18 496580E 4343319N - Lat. 39° 14' 28"N, Long. 75° 02' 23"W - Assoc. spp.: *Lecanora* spp.

Thallus crustose, thin and indistinct; apothecia red-brown to black, small, epruinose; spores simple, ca. 8 per. ascus.

James C. Lendemer #615 & Gerry Moore

January 18, 2003

**67. *Amandinea polyspora* (Willey) E. Lay & P. May**

Det. J.C. Lendemer – January 20, 2003

Dup. Confirmed (SASK!) – J.W. Sheard – February 5, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the bark of dead, rotting trees, in a swampy forest (with *Pinus rigida*, *Liquidambar*, *Populus*, etc.), adjacent to tidal marshes, along the west shore of the Maurice River, at the terminus of Strawberry Lane, Port Norris, Commercial Township. - UTM 18 496580E 4343319N - Lat. 39° 14' 28"N, Long. 75° 02' 23"W - Assoc. spp.: *Pertusaria xanthodes*, *Pyrrhospora varians*.

Thallus crustose, gray; apothecia black; spores 2-celled, transversely septate, slightly constricted at septum, brown, >8 per ascus.

James C. Lendemer #616 & Gerry Moore

January 18, 2003

**68. *Hypocenomyce friesii* (Acharius) P. James & Gotth. Schneider**

Dup. Determined (NY!) – R.C. Harris – March 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the trunks of dead Atlantic White Cedar (*Chamaecyparis thyoides*), in a cedar swamp along the east shore of the Batsto River, ca. ½ mile north of Quaker Bridge, east of Atsion, Batsto Natural Area, Wharton State Forest. – elev. <10 ft. - UTM 18 528571E 4395347N – Lat. 39° 42' 34"N, Long. 74° 40' 00"W – Assoc. spp.: *Cladonia macilenta*, *Cladonia* sp.

Thallus squamulose, corticolous; squamules brown, esorediate; apothecia black.

James C. Lendemer #647 & Erin Tripp

February 9, 2003

- 69.** *Hypocenomyce anthracophila* (Nylander) P. James & Gotth. Schneider  
Dup. Determined (NY!) – R.C. Harris – March 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the trunks of dead Atlantic White Cedar (*Chamaecyparis thyoides*), in a cedar swamp along the east shore of the Batsto River, ca. ½ mile north of Quaker Bridge, east of Atsion, Batsto Natural Area, Wharton State Forest. – elev. <10 ft. - UTM 18 528571E 4395347N – Lat. 39° 42' 34"N, Long. 74° 40' 00"W – Assoc. spp.: *Cladonia macilenta*, *Cladonia* sp.

Thallus squamulose, corticolous; squamules brown, sorediate; apothecia rare, brown.

James C. Lendemer #648 & Erin Tripp

February 9, 2003

- 70.** *Loxospora pustulata* (Brodo & Culberson) R.C. Harris  
Dup. Determined (NY!) - R.C. Harris – March 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the bark of a large oak (*Quercus*) on the edge of a cedar swamp along the east shore of the Batsto River, ca. ½ mile north of Quaker Bridge, east of Atsion, Batsto Natural Area, Wharton State Forest. – elev. <10 ft. - UTM 18 528571E 4395347N – Lat. 39° 42' 34"N, Long. 74° 40' 00"W – Assoc. spp.: *Pertusaria paratuberculifera*, *Parmelia squarrosa*, *Punctelia rufecta*, *Flavoparmelia caperata*, *Lecanora hybocarpa*.

Thallus crustose, corticolous, with conspicuous white prothallus, schizidiate/pustulose.

James C. Lendemer #658 & Erin Tripp

February 9, 2003

- 71.** *Parmotrema rigidum* (Lynge) Hale  
Det. J.C. Lendemer – March 22, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On the branches of the crowns of trees, along a path leading to the foot-tunnel under NC Route 58, Trinity Center, Bogue Banks, ca. 7 miles south of Atlantic Beach. – elev. <5 ft. - UTM 18 326044E 3839952N – Lat. 34° 41' 19"N, Long. 76° 53' 56"W – Assoc. spp.: *Usnea strigosa aggregate*, *Ramalina willeyi*.

Thallus foliose, corticolous, apotheciate, esorediate; apothecia often perforate, large, raised; lobes broad, ascending; marginal cilia sparse to abundant; lower surface black near center with a wide white margin; medulla UV+ blue-white.

James C. Lendemer et al. #667  
w/ participants of Tuckerman Workshop #12

March 19, 2003

- 72.** *Parmotrema tinctorum* (Despréaux ex Nylander) Hale  
Det. J.C. Lendemer – March 22, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On *Juniperus silicicola* exposed to ocean winds, on the edge of a large maritime forest, dominated by *Quercus virginianus* and *Juniperus silicicola*, Shackleford Island, Cape Lookout National Seashore. – elev. <10ft. - UTM 18 349808E 3838961N – Lat. 34° 41' 01"N, Long. 76° 38' 22"W – Assoc. spp.: *Dirinaria confusa*, *Physcia americana*, *Leptogium cyanescens*, *Pertusaria* sp., *Pertusaria paratuberculifera*.

Thallus foliose, corticolous, pale gray-white; lobes large, broad; marginal cilia lacking; isidia abundant in center of thallus; underside black with a marginal brown zone; cortex UV-; medulla C+ red.

James C. Lendemer et al. #673  
w/ participants of Tuckerman Workshop #12

March 19, 2003

- 73.** *Ramalina willeyi* R. Howe  
Det. J.C. Lendemer & S. LaGreca – March 19, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On the branches of the crowns of trees, along a path leading to the foot-tunnel under NC Route 58, Trinity Center, Bogue Banks, ca. 7 miles south of Atlantic Beach. – elev. <5 ft. - UTM 18 326044E 3839952N – Lat. 34° 41' 19"N, Long. 76° 53' 56"W – Assoc. spp.: *Usnea strigosa-aggregate*, *Parmotrema rigidum*.

Thallus fruticose, corticolous, apotheciate; spores straight, ellipsoid.

James C. Lendemer *et al.* #668  
w/ participants of Tuckerman Workshop #12

March 19, 2003

**74. *Ramalina stenospora* Müll. Arg.**  
Det. J.C. Lendemer & S. LaGreca – March 20, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On the bases of red maple (*Acer rubrum*), in a freshwater swamp, bordering the North Carolina Aquarium parking lot and access road, Theodore Roosevelt Natural Area, just north of North Carolina Aquarium, Bogue Banks. – elev. <10 ft. - UTM 18 332449E 3841008N – Lat. 34° 41' 57"N, Long. 76° 49' 45"W – Assoc. spp.: *Lobaria ravenelii*, *Bactrospora lamprospora*, *Bacidia schweinitzii*, *Collema pulcellum*, *Graphis spp.*, *Thelotrema sp.*, *Ramalina willeyi*, *Usnea pensylvanica*, *Leptogium cyanescens*, *Brigantiae leucoxantha*.

Thallus fruticose, corticolous, shrubby to subpendent, apothecia abundant; spores long.

James C. Lendemer *et al.* #670  
w/ participants of Tuckerman Workshop #12

March 20, 2003

**75. *Cladonia dimorphoclada* Robbins**  
Det. J.C. Lendemer – March 18, 2003  
Dup. Confirmed (H!) – T. Ahti – February 3, 2004

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On sand along a disturbed sand road, on the edge of a *Pinus palustris-Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242192E 3826335N – Lat. 34° 32' 54"N, Long. 77° 48' 34"W – Assoc. spp.: *Trapeliopsis flexuosa*, *Cladonia pachycladodes*, *Cladonia leporina*.

Thallus terricolous, prostrate and “creeping” across ground, forming small flat cushions, esorediate.

James C. Lendemer *et al.* #669  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**76. *Cladonia pachycladodes* Vainio**  
Det. J.C. Lendemer – March 18, 2003  
Dup. Confirmed (H!) – T. Ahti – February 3, 2004

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On sand, in sandy barrens, in a *Pinus palustris-Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Trapeliopsis flexuosa*, *Cladonia rappii*, *Cladonia subtenuis*, *Cladonia subsetacea*, *Cladonia leporina*.

Thallus terricolous, prostrate, forming cushions, white to blue-gray, esorediate.

James C. Lendemer *et al.* #672  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**77. *Cladonia rappii* A. Evans**  
Det. J.C. Lendemer – March 18, 2003  
Dup. Confirmed (H!) – T. Ahti – February 3, 2004

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On sand, in sandy barrens, in a *Pinus palustris-Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly

Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Trapeliopsis flexuosa*, *Cladonia pachycladodes*, *Cladonia subtenuis*, *Cladonia subsetacea*, *Cladonia leporina*.

Thallus terricolous, fruticose, “primary” squamules sparse/absent, podetia forming tall, stacked cups, esorediate.

James C. Lendemer *et al.* #671  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**78. *Usnea mutabilis* Stirton**

Det. J.C. Lendemer – March 22, 2003  
Dup. Confirmed (UC!) – I.I. Tavares – April 18, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On a fallen tree on the edge of an extensive saltwater marsh, Theodore Roosevelt Natural Area, just north of North Carolina Aquarium, Bogue Banks. – elev. <5 ft. - UTM 18 332175E 3840998N – Lat. 34° 41' 56"N, Long. 76° 49' 56"W – Assoc. spp.: *Leptogium cyanescens*, *Bacidia heterochroa*, *Usnea evansii*, *Usnea strigosa-aggregate*, *Ramalina willeyi*, *Ramalina stenospora*, *Parmotrema rigidum*.

Thallus corticolous, shrubby to subpendent, sorulate; branches tapering and becoming thin and slender towards tips; soralia small, abundant on branches and fibrils, often with isidiomorphs; medulla red or red with a layer of white medullary tissue beneath (this often occurs in *U. strigosa*-aggregate as well); base not distinctly blackened. This species is rather common throughout eastern North America, however, a wide variety of material is often misidentified as *U. mutabilis* and *U. mutabilis* is often misidentified as a variety of other entities. The species is characterized by the presence of soralia coupled with a red pigmented medulla.

James C. Lendemer *et al.* #674  
w/ participants of Tuckerman Workshop #12

March 20, 2003

**79. *Ochrolechia africana* Vainio**

Det. J.C. Lendemer – March 22, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On a large *Vaccinium*, in a *Pinus palustris-Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Graphis* spp., *Haematomma* sp., *Loxospora pustulata*.

Thallus crustose, corticolous, thin to thick, gray-white; cortex UV+ yellow; apothecia small to large, with a white pruina, disks pink.

James C. Lendemer *et al.* #675  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**80. *Parmeliopsis subambigua* Gyelnik**

Det. J.C. Lendemer – March 22, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On the bark of *Pinus palustris*, in a *Pinus palustris-Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W.

Thallus foliose, closely attached to substrate, corticolous, green; lobes small and occasionally nearly imperceptible; soralia arising from pustules on the lobe surface.

James C. Lendemer *et al.* #680  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**81. *Cladonia leporina* Fries**

Det. J.C. Lendemer – March 18, 2003  
Dup. Confirmed (H!) – T. Ahti – February 3, 2004

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On sand, in sandy barrens, in a *Pinus palustris*-*Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Trapeliopsis flexuosa*, *Cladonia rappii*, *Cladonia subtenuis*, *Cladonia subsetacea*, *Cladonia pachycladodes*.

Thallus terricolous, yellow-green; podetia thick; apothecia abundant, red.

James C. Lendemer *et al.* #681  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**82. *Coccocarpia palmicola* (Sprengel) Arvidsson & D.J. Galloway**  
Det. J.C. Lendemer – March 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On the moist, shaded portions of a rotting oak trunk, in a *Pinus palustris*-*Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Cladonia leporina*, *Trapeliopsis flexuosa*.

Thallus corticolous, foliose, gray, isidiate; isidia abundant in center of thallus.

James C. Lendemer *et al.* #682  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**83. *Sticta carolinensis* McDonald**  
Det. J.C. Lendemer – March 25, 2003  
Dup. Confirmed (HB. LENDEMER!) – R.C. Harris – April 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. JONES COUNTY.:** On *Fagus*, in a *Fagus-Carpinus-Taxodium* forest with marl outcrops along Island Creek, north of NC Bike 3, Island Creek Walk, Croatan National Forest. – ca. 25 ft. - UTM 18 305103E 3877968N – Lat. 35° 01' 39"N, Long. 77° 08' 11"W – Assoc. spp.: *Leptogium cyanescens*.

Thallus foliose, dark brown, lobulate; underside white to light brown, cypellae small, conspicuous, white; medulla white; lobules small, on lobe margins.

James C. Lendemer *et al.* #695  
w/ participants of Tuckerman Workshop #12

March 17, 2003

**84. *Usnea strigosa* (Acharius) Eaton ssp. *major* (Michaux) I.I. Tavares**  
Det. I.I. Tavares – March 23, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. MACON COUNTY.:** Abundant on the branches of four small trees in the clearing of the back yard of Valentine House, Highlands Biological Station, east of Highlands. - UTM 17 300384E 3880982N – Lat. 35° 03' 14"N, Long. 83° 11' 20"W – Assoc. spp.: *Usnea cf. evansii*, *Usnea cf. endrochrysea*, *Usnea* sp. in *strigosa*-group, *Usnea cf. strigosa* ssp. *major* (*undetermined morphotypes*).

*Lendemer 725* forms part of a mass collection of short, apotheciate *Usnea* from this locality where >200 thalli were collected and ca. 50 were determined by I.I. Tavares. The thalli included here are those determined to be consubspecific with the type of *Usnea strigosa* ssp. *major* by I.I. Tavares. Apparently the Highlands region represents an area in which several taxa of the *U. strigosa* group *sensu* Tavares occur together. All other specimens from this mass collection have been retained in hb. Lendemer and, those determined by Tavares have been accessioned into the herbarium.

James C. Lendemer #725

July 15, 2002

**85. *Trypethelium virens* Tuckerman ex E. Michener**  
Det. J.C. Lendemer – March 31, 2003  
Dup. Confirmed (NY!) – R.C. Harris – April 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On a small tree on the edge of a water filled ditch, adjacent to a small wooden bridge over ditch, on the edge of a pocosin dominated by *Gordonia lasianthus*, *Persea borbonia* and *Magnolia virginiana*, along Lodge Road, 1.2 miles east of Shaw Highway (SR 1523), 5.3 mi south of NC 53, Holly Shelter Game Land. - Long. 34°33'07"N, Lat. 77°47'37"W – Assoc. spp.: *Canoparmelia caroliniana*, *Phaeographis dendritica*, *Ochrolechia africana*.

Thallus corticolous, crustose, esorediate; ascomata within pseudostromata; ascospores ca. 8 per ascus; spores colorless, >6 celled.

James C. Lendemer *et al.* #726  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**86. *Usnea pensylvanica* Motyka**

Det. J.C. Lendemer – April 2, 2003  
Dup. Confirmed (UC!) – I.I. Tavares – April 18, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. PENDER COUNTY.:** On live oak (*Quercus laevis*), in a *Pinus palustris*-*Quercus laevis* dominated sand scrub community with a *Vaccinium* understory, 5.3 miles south of NC Route 53, just east of Shaw Highway (NC SR 1523) at Lodge Road, Holly Shelter Game Land. – UTM 18 242782E 3826763N – Lat. 34° 33' 08"N, Long. 77° 48' 11"W – Assoc. spp.: *Usnea strigosa*-group, *Usnea mutabilis*, *Usnea trichodea*, *Parmotrema tinctorum*, *Parmotrema rampoddense*, *Graphis* spp., *Ochrolechia africana*.

Thallus subpendent, corticolous; cortex pigmented dull red at basal (lower) portions of thallus (though the pigment may be dispersed throughout the thallus); medulla white; axis opaque to pinkish; soralia abundant on branches and fibrils, with occasional isidiomorphs. A thallus with few fibrils and abundant, large, raised soralia was designated *Lendemer* 728 (HB. LENDEMER) and, thalli with an overall more yellow/orange coloration, and pigment dispersed throughout more of the thallus were designated *Lendemer* 729 (ASU, FH, MIN, NDA, NY, HB. LENDEMER, UC).

*Usnea pensylvanica* Motyka is one of a number of species of *Usnea* having red pigmentation in the cortex, most of which have at one time or another been referred to *U. rubicunda* Stirton (or *U. rubiginea* (Michaux) A. Massalongo; syn. *U. barbata* var. *rubiginea* (Michaux) Tuckerman), which was a misapplied name. It should be applied to a short apotheciate taxon now referred to as *U. strigosa* ssp. *rubiginea* (Michaux) I.I. Tavares). Following its description by Motyka (1937) *U. pensylvanica* was virtually ignored in print with occasional exceptions such as Flenniken (1999). Most field guides and keys (Brodo *et al.*, 2001; Hinds & Hinds, 1998) have referred material conspecific with the type of *U. pensylvanica* to *U. rubicunda*, presumably simply on the basis of the presence of the red pigmentation. However, the taxa differ in several respects including the branching pattern, general coloration, thickness of cortex, and the internal anatomy as well as characteristics of the soralia and isidia.

Ohmura (2001) placed *U. pensylvanica* in synonymy with *U. rubicunda* without explanation, listing the collector of the type of *U. pensylvanica* as unknown (in fact it was collected by G.H.E. Muhlenberg though this was not indicated by Motyka (1937)). An extensive review of the various taxonomic dispositions of the red *Usneas* is underway (Lendemer & Tavares, unpublished), but it can be stated here that *U. pensylvanica* has a thinner cortex than those taxa that at present are regarded as *U. rubicunda* on the Pacific Coast of North America. Too, in *U. pensylvanica* the soralia are small and not conspicuously elevated above the surface of the cortex, and the red pigmentation is duller in color. The *U. rubicunda* of the Pacific Coast possesses more conspicuous isidia and fibrils. The distribution patterns of the North American material referable to *U. rubicunda* and *U. pensylvanica* have not yet been determined.

James C. Lendemer *et al.* #727  
w/ participants of Tuckerman Workshop #12

March 18, 2003

**87. *Heterodermia albicans* (Persoon) Swinscow & Krog**  
Det. J.C. Lendemer – April 2, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CARTERET COUNTY.:** On *Juniperus silicicola* exposed to ocean winds, on the edge of a large maritime forest, dominated by *Quercus virginianus* and *Juniperus silicicola*, Shackleford Island, Cape Lookout National Seashore. – elev. <10ft. – UTM 18 349808E 3838961N – Lat. 34° 41' 01"N, Long. 76° 38' 22"W – Assoc. spp.: *Dirinaria confusa*, *Physcia americana*, *Leptogium cyanescens*, *Pertusaria* sp., *Pertusaria paratuberculifera*, *Parmotrema tinctorum*.

Thallus foliose, corticolous, closely attached to substrate; soralia abundant; medulla KOH+ yellow turning red.

James C. Lendemer *et al.* #730  
w/ participants of Tuckerman Workshop #12

March 19, 2003

- 88. *Arthonia caesia* (Flotow ex Körber) Körber**  
Det. J.C. Lendemer – April 21, 2003  
Dup. Confirmed (NY!) – R.C. Harris – April 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On oak (*Quercus*), in a mixed pine (*Pinus*) – oak (*Quercus*) – red maple (*Acer rubrum*) forest, on the margins of Bear Swamp West, ca. ¼ mile from entrance along NJ Route 553, east of Newport. – elev. <10 ft. - UTM 18 487253E 4348480N – Lat. 39° 17' 15"N, Long. 75° 08' 52"W – Assoc. spp.: *Rinodina maculans*, *Buellia curtisii*, *Heterodermia speciosa*, *Phaeophyscia rubropulchra*, *Punctelia rudecta*, *Parmelia squarrosa*, *Flavoparmelia caperata*, *Lecanora spp.*, *Physcia milligrana*, *Physcia stellaris*, *Pertusaria xanthodes*.

Thallus corticolous, crustose, granular, green; apothecia biatorine, black-blue, with a heavy white pruina.

James C. Lendemer *et al.* #773  
w/ James A. Macklin and Gerry Moore

April 13, 2003

- 89. *Pertusaria paratuberculifera* Dibben**  
Det. J.C. Lendemer – April 27, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On a dead oak (*Quercus*), along a small stream (Cedar Branch), in a pine (*Pinus*) / oak (*Quercus*) forest, on the edge of a cedar swamp, several yards south of Factory Road, ca. ¾ mile from intersection of Factory Road with Newport-Center Grove Road, ca. 3 miles northeast of Newport. – elev. ca. 50 ft. - UTM 18 487269E 4352468N – Lat. 39° 19' 24"N, Long. 75° 08' 52"W – Assoc. spp.: *Bacidia schweinitzii*, *Punctelia rudecta*, *Flavoparmelia caperata*, *Lepraria spp.*

Thallus corticolous, crustose, blue-gray, thick to thin; cortex UV+ yellow. Note that this species is common throughout New Jersey and seems to prefer the mossy bark of dead oaks.

James C. Lendemer *et al.* #808  
w/ Gerry Moore *et al.*

April 26, 2003

- 90. *Parmelia squarrosa* Hale**  
Det. J.C. Lendemer – April 27, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On a dead oak (*Quercus*), along a small stream (Cedar Branch), in a pine (*Pinus*) / oak (*Quercus*) forest, on the edge of a cedar swamp, several yards south of Factory Road, ca. ¾ mile from intersection of Factory Road with Newport-Center Grove Road, ca. 3 miles northeast of Newport. – elev. ca. 50 ft. - UTM 18 487269E 4352468N – Lat. 39° 19' 24"N, Long. 75° 08' 52"W – Assoc. spp.: *Bacidia schweinitzii*, *Punctelia rudecta*, *Flavoparmelia caperata*, *Lepraria spp.*

Thallus corticolous, foliose, isidiate; underside black; medulla KOH+ red; isidia sparse near lobe tips, becoming abundant towards center of thallus.

James C. Lendemer *et al.* #809  
w/ Gerry Moore *et al.*

April 26, 2003

- 91. *Fissurina insidiosa* C. Knight & Mitten**  
Det. James C. Lendemer – April 29, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the bark of sweet bay magnolia (*Magnolia virginiana*), in a swampy old-growth forest of *Liriodendron*, *Liquidambar*, *Quercus*, and *Acer rubrum* with a sparse *Vaccinium* / *Smilax* understory, along Nature Conservancy property

boundary, Bear Swamp West, ca. 2 miles northeast of Newport. – elev. ca. 10 ft. - UTM 18 488493E 4349984N – Lat. 39° 18' 04"N, Long. 75° 08' 01"W – Assoc. spp.: *Graphis* spp., *Pertusaria* spp.

Thallus corticolous, crustose, blue-gray, cortex UV-; lirellae immersed within thallus; spores colorless, 4-celled, transversely septate. This species was observed growing only on this tree and another several hundred yards away (*Lendemer* 812).

James C. Lendemer *et al.* #811  
w/ Gerry Moore *et al.*

April 26, 2003

**92. *Cladonia incrassata* Flörke**

Det. J.C. Lendemer – April 29, 2003

Dup. Confirmed (H!) – T. Ahti – August 12, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On rotting logs (mostly *Pinus*) on the margins of a dirt road bordering Bear Swamp East Natural Area, on the edge of a mixed pine (*Pinus* spp.) / oak (*Quercus*) forest, ca. 4 miles northeast of Newport, ca. 2 miles east of Paynters Crossing, < ½ mile east of Dividing Creek Station, Bear Swamp East Natural Area. – elev. 45 ft. - UTM 18 492354E 4350126N – Lat. 39° 18' 09"N, Long. 75° 05' 19"W – Assoc. spp.: *Cladonia cristatella*, *Cladonia parasitica*, *Cladonia grayi*, *Cladonia* spp.

Thallus lignicolous; podetia short, esorediate; apothecia bright red; “primary” squamules sorediate (on the lower surface), medulla UV+ blue-white.

James C. Lendemer *et al.* #812  
w/ Gerry Moore *et al.*

April 27, 2003

**93. *Lobaria quercizans* Michaux**

Det. J.C. Lendemer – April 29, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** Covering the trunk of a large red maple (*Acer rubrum*), in an old growth forest of *Liriodendron*, *Liquidambar*, and *Magnolia*, ca. ¾ mile south of railroad tracks, ca. 1 mile southeast of Dividing Creek Station, ca. 5 miles northeast of Newport. - elev. < 10 ft. - UTM 18 492937E 4348922N – Lat. 39° 17' 29"N, Long. 75° 04' 55"W – Assoc. spp.: *Punctelia rudecta*, *Anaptychia palmulata*, *Baicida schweinitzii*, *Lepraria* spp., *Phaeophyscia rubropulchra*.

Thallus corticolous, foliose, gray; lobes broad, abundant, overlapping; underside pale.

James C. Lendemer *et al.* #813  
w/ Gerry Moore *et al.*

April 27, 2003

**94. *Phaeophyscia rubropulchra* (Degelius) Esslinger**

Det. J.C. Lendemer – May 4, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On the moss covered bark of an oak (*Quercus*) at the entrance to North/South Trail along Ackley Road, on the border of a pine (*Pinus*) dominated forest of pine (*Pinus*) and oak (*Quercus*), Nature Conservancy Preserve, Bear Swamp West, ca. 1 mile northeast of Frames Corner. - elev. < 70 ft. - UTM 18 487958E 4351091N – Lat. 39° 18' 40"N, Long. 75° 08' 23"W – Assoc. spp.: *Punctelia subrudecta*, *Punctelia rudecta*, *Flavoparmelia caperata*, *Parmotrema* spp., *Parmelia squarrosa*.

Thallus corticolous, foliose, gray, soraliolate; underside and rhizines black; medulla orange to red.

James C. Lendemer *et al.* #823  
w/ Gerry Moore *et al.*

April 26, 2003

**95. *Biatora longispora* (Degelius) Lendemer & Printzen comb. nov.<sup>1</sup>**

Det. R.C. Harris & J.C. Lendemer – May 15, 2003

Dup. Confirmed (FR!) – C. Printzen – June 14, 2003

**UNITED STATES OF AMERICA. NEW YORK. PUTNAM COUNTY.:** On ash (*Fraxinus*), at trail-head along Couch Road, Cornwall Hill, south of Couch Road, ca. .04 miles east of Cornwall Hill Road,

Sterling Farm Preserve, Patterson. – elev. ca. 600 ft. - UTM 18 617408E 4593336N – Lat. 41° 29' 06"N, Long. 73° 35' 37"W – Assoc. spp.: *Phaeophyscia rubropulchra*, *Lepraria* sp.

Thallus corticolous, crustose, gray-blue, esorediate; apothecia biatorine, pale orange; spores long, (0)-1-(3) septate, colorless.

James C. Lendemer #829 & William R. Buck

May 14, 2003

**96. *Parmelia squarrosa* Hale**

Det. J.C. Lendemer – May 18, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** Abundant on oak (*Quercus*), in a pine (*Pinus rigida*, *Pinus* spp.) dominated pine-oak forest, at the intersection of two unnamed sand roads, ca. ¾ mile west of Lower Forge, ca. 2 ¼ miles southeast of Atsion, Batsto Natural Area, Wharton State Forest. – elev. ca. 40 ft. - UTM 18 526952E 4396821N – Lat. 39° 43' 22"N, Long. 74° 41' 08"W – Assoc. spp.: *Flavoparmelia caperata*, *Punctelia rudecta*, *Parmotrema* spp., *Cladonia* spp., *Hypotrachyna livida*, *Parmelia sulcata*.

Thallus corticolous, foliose, gray-blue, isidiate; underside black; medulla white, KOH+ red. Note that at this locality *P. sulcata* Taylor (soraliate, and lacking densely squarrosely branched rhizines) occurs with *P. squarrosa*.

James C. Lendemer #832 & Leonard H. Smith II

May 17, 2003

**97. *Hypotrachyna livida* (Taylor) Hale**

Det. J.C. Lendemer – May 18, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** Abundant on oak (*Quercus*), in a pine (*Pinus rigida*, *Pinus* spp.) dominated pine-oak forest, at the intersection of two unnamed sand roads, ca. ¾ mile west of Lower Forge, ca. 2 ¼ miles southeast of Atsion, Batsto Natural Area, Wharton State Forest. – elev. ca. 40 ft. - UTM 18 526952E 4396821N – Lat. 39° 43' 22"N, Long. 74° 41' 08"W – Assoc. spp.: *Flavoparmelia caperata*, *Punctelia rudecta*, *Parmotrema* spp., *Cladonia* spp., *Parmelia squarrosa*, *Parmelia sulcata*.

Thallus corticolous, foliose, gray, esorediate, lacking isidia; apothecia abundant.

James C. Lendemer #833 & Leonard H. Smith II

May 17, 2003

**98. *Flavoparmelia baltimorensis* (Gyelnik & Fóriß) Hale**

Det. J.C. Lendemer – May 19, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On rocks on a steep rocky slope, on the north shore of Mud Run Creek, Mud Run Natural Area, Hickory Run State Park, ca. 1 ½ miles southwest of Albrightsville. – elev. ca. 1300 ft. - UTM 18 446059E 4539244N – Lat. 41° 00' 16"N, Long. 75° 38' 29"W – Assoc. spp.: *Xanthoparmelia* spp., *Lepraria* sp.

Thallus saxicolous, foliose, loosely attached to substrate, yellow-green, pustular/schizidiate; pustules on lobe surface, sparse near tips, abundant near center; underside black, with a marginal brown zone.

James C. Lendemer #840 & Erin Tripp

May 18, 2003

**99. *Parmelia neodiscordans* Hale**

Det. J.C. Lendemer – May 19, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On several rocks in a *Rhododendron* thicket with partial sun, at the base of a steep rocky slope, on the north shore of Mud Run Creek, Mud Run Natural Area, Hickory Run State Park, ca. 1 ½ miles southwest of Albrightsville. – elev. ca. 1300 ft. - UTM 18 446059E 4539244N – Lat. 41° 00' 16"N, Long. 75° 38' 29"W – Assoc. spp.: *Xanthoparmelia* spp., *Lepraria* sp., *Punctelia rudecta*, *Flavoparmelia baltimorensis*.

Thallus saxicolous, foliose, esorediate, isidia lacking, apothecia lacking; underside black; lobules abundant, small, with slightly browned tips; medulla white, KOH-, KC+ rose.

James C. Lendemer #841 & Erin Tripp

May 18, 2003

**100. *Placynthiella oligotropha* (J.R. Laundon) Coppins & P. James**

Det. J.C. Lendemer – May 19, 2003

Dup. Confirmed (NY!) – R.C. Harris – June 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** Abundant on sandy soil, on the margins of an unnamed sand road, in a pine (*Pinus rigida*, *Pinus* spp.) dominated pine-oak forest, at the intersection of two unnamed sand roads, ca.  $\frac{3}{4}$  mile west of Lower Forge, ca. 2  $\frac{1}{4}$  miles southeast of Atsion, Batsto Natural Area, Wharton State Forest. – elev. ca. 40 ft. - UTM 18 526952E 4396821N – Lat. 39° 43' 22"N, Long. 74° 41' 08"W – Assoc. spp.: *Cladonia* spp.

Thallus terricolous, areolate; areoles brown (olive when wet), esorediate.

James C. Lendemer #839 & Leonard H. Smith II

May 18, 2003

**ACKNOWLEDGMENTS**

When I began to prepare this exsiccat some individuals expressed their doubts as to the value of distributing specimens from a region that was “so well known.” An overwhelming number of others (lichenologists and general botanists alike) however encouraged me to undertake this project despite such objections and I would like to take this opportunity to thank those who have continued to support me in innumerable ways in both the field and herbarium. I also wish to thank the following for their companionship during fieldwork: William R. Buck (NY), James A. Macklin (NJ), Moira J. Moody (WV), Gerry Moore (NJ), Leonard H. Smith II (NC, NJ), Erin Tripp (NJ), the participants of Tuckerman Workshop #12 (NC), The Philadelphia Botanical Club (NJ), and The Torrey Botanical Club (NJ). Lastly, I wish to thank the following individuals for identifying and verifying specimens distributed in the second fascicle of this exsiccat: Teuvo Ahti (H), Othmar Breuss (W), Theodore Esslinger (NDA), Richard C. Harris (NY), Scott LaGreca (FH), Louise Lindblom (BG), Christian Printzen (FR), John W. Sheard (SASK), Isabelle I. Tavares (UC), and Orvo Vitikainen (H).

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**END NOTES**

<sup>1</sup>*Biatora longispora* (Degelius) Lendemer & Printzen *comb. nov.*

*Lecidea helvola* var. *longispora* Degelius, Ark. Bot., 30A: 38. 1943. TYPE: On trunk of *Abies fraseri*, Forney Ridge, North Carolina, USA. 12.IX.1939. *Degelius s.n.* (UPS!, holotype).

Thallus endosubstratal or smooth to irregularly wrinkled, rarely rimose in parts and forming areoles of 0.3-0.6 mm diam., esorediate; surface light green to vivid green, whitish to sordid gray in older specimens, matt; photobiont trebouxioid. Apothecia rounded to deformed, rarely tuberculate, mostly single, more rarely crowded in small groups,

sessile with a weakly constricted base, often closely appressed on the thallus, av. diam. 0.25-0.45 mm, max. diam. 0.40-0.75 mm; disc beige to orange brown, flat to weakly, rarely strongly convex, epruinose, matt to slightly glossy; margin relatively broad but weakly prominent in young apothecia, persistent or excluded in older apothecia, of same color or slightly lighter than disc on the outside, often slightly darker near disc, glossy. Exciple colorless throughout or colorless externally and yellowish brown to orange brown inside especially near hymenium, laterally 40-65 µm, basally 35-65 (-120) µm wide, of radiating, weakly branched and anastomosing hyphae with cylindrical lumina of 1-2 µm, apically 1-3 µm; hypothecium 25-50 (-80) µm high, colorless or pale golden-yellow; subhymenium 20-50 (-65) µm high; hymenium (40-) 45-50 µm high, pale yellow to orange brown, rarely colorless; epihymenium lacking; paraphyses simple or weakly branched and anastomosing, with 0.7-1.0 µm, apically 1.0-1.2 (-1.5) µm wide lumina; ascospores colorless, simple, very rarely 1-septate, (12.5-) 16.5-21.6 (-26.0) × (3.0-) 3.5-4.1 (-5.0) µm. Pycnidia not observed. Chemistry: no substances by TLC.

Among predominantly corticolous species of *Biatora*, *B. longispora* is characterized by the absence of lichen substances and the extremely long and narrow, eiseptate spores. *Biatora alborufidula* (Hedl.) S. Ekman & Printzen has shorter and narrower ascospores that are mostly 1-septate, in *B. nobilis* Printzen & Tønsberg and *B. rufidula* (Graewe) S. Ekman & Printzen they are 3-septate and much broader. *Biatora vernalis* (L.) Fr., which is only occasionally corticolous, and the closely related *B. alaskana* Printzen & Tønsberg, both have considerably larger apothecia and ascospores. The Central European *B. subgilva* (Arnold) Hinteregger has similarly long and narrow spores, but contains usnic and isousnic acids. Furthermore it is hitherto only known from a restricted area in the eastern Alps, where it grows on subalpine shrubs. Characteristic features of *B. longispora* are comparatively small and shallow, often somewhat appressed apothecia with a conspicuously glossy margin. As in *B. subduplex*, which has shorter ascospores, the interior parts of the exciple are often pigmented orange-brown. In both species this pigmentation is visible from the outside as a slightly darker ring around the apothecial disc. *Biatora longispora* was described as a variety of *Lecidea helvola* (= *Biatora helvola*) by Degelius (1941) on the basis of four collections from the Great Smoky Mountains (North Carolina and Tennessee). To our knowledge the name has not been used afterwards by North American authors. Most of the specimens seen by us originate also from the southern Appalachians, but the collections from Massachusetts, New Jersey, and New York show that the species is actually much more widely distributed. As far as can be deduced from the limited material seen by us, *B. longispora* prefers the bark of deciduous trees and shrubs (*Acer saccharum*, *Acer* sp., *Aesculus octandra*, *Alnus rugosa*, *Hamamelis virginiana*, *Ilex* sp., *Quercus rubra*, *Sorbus americana*). In the southern part of its range it was collected between 970-1820 m elevation, in the northern part between 450-790 m.

Selected Specimens Examined: U.S.A.: Connecticut. Litchfield Co. *Lendemer* 1370, 1386 (HB. LENDEMER). Georgia. Union Co. *Printzen* 6638, 6639 (BG). Massachusetts. Berkshire Co. May 5409, 5412, 5446 (hb. May). Worcester Co. May 3286 (hb. May), Lay 4342 (hb. May). Maine. York Co. May 5959A, 5963C, 5964A, 5965A, 5965B, 5966B, 5967A, 5969, 5970B, 5971A (hb. May). New Hampshire. Carroll Co. May 5949B, 5950A, 5951A, 5952B, 5953, 5956A, 5957A (hb. May). New Jersey. Cumberland Co. *Lendemer* et al. 793 (HB. LENDEMER). New York. Putnam Co. *Lendemer* & Buck 829 (HB. LENDEMER). Rensselaer Co. May 5997A, 5997B, 5998, 6002, 6003, 6004A, 6014 (hb. May). Ulster Co. Tønsberg 17784 (BG). North Carolina. Haywood Co. Tønsberg 21876 (BG). Jackson Co. Nash 18777 (STU). Swain Co. Nordin 4059 (UPS). *Printzen* 6818, 6835 (BG). Transylvania Co. Tønsberg 21793, 21796 (BG). Ohio. Hocking Co. Wetmore 18076 (MIN). Pennsylvania. Carbon Co. *Lendemer* & Rhoads 1290, 1291, 1292 (HB. LENDEMER). Pike Co. May 6018, 6019, 6025, 6026A, 6028, 6029, 6030, 6033, 6035, 6037 (hb. May). Wyoming Co. May 6038, 6040, 6041, 6044, 6045, 6046, 6054, 6056, 6061, 6062 (hb. May). Tennessee. Polk Co. *Printzen* 6875 (BG). Unicoi Co. *Printzen* 6781 (BG). Vermont. Bennington Co. May 5978, 5979B, 5981, 5984, 5987, 5989 (hb. May). Virginia. Washington Co. *Printzen* 6746 (BG). West Virginia. Pocahontas Co. *Lendemer* & Moody 871, 872, 876, 878, 879, 880, 881 (HB. LENDEMER).



# Lichens of Eastern North America Exsiccati. Fascicle III, nos. 101-150

JAMES C. LENDEMER<sup>1</sup>

**ABSTRACT.** - In conjunction with the preparator's work on the lichen flora of eastern North America the author began the distribution of this exsiccat (Lichens of Eastern North America Exsiccati) from the Academy of Natural Sciences of Philadelphia (PH). This, the third fascicle in the series comprises the nos. 101 to 150 and is distributed in 20 sets on exchange to the following herbaria: ASU, B, BG, CANB, CBM, CHR, DOV, FH, GZU, H, HMAS, M, MIN, S, TSB, TNS, TU, UPS, herb. Lendemer. The following changes are made to the North American checklist: *Agonimia opuntiella* (Buschardt & Poelt) Vězda is reported for the first time from North America; *Byssoloma pubescens* R.C. Harris is placed in synonymy with *B. meadii* (Tuckerman) Ekman; and *Placidium lacinulatum* var. *atrans* Breuss is described as new to science.

## INTRODUCTION

This exsiccat was begun with the intent to distribute specimens of eastern North American lichens to herbaria worldwide in an effort to improve our general knowledge of the region. The first fascicle consisted primarily of specimens of Cladoniaceae collected with Samuel Hammer as part of an NSF grant to study the family. The second fascicle was not devoted to any specific group or region and instead was intended simply to distribute material from some of the areas to which I had access during that period. This, the third fascicle in the series comprises numbers 101-150 and too, is a result of my opportunities in the field in 2003 through 2004. This exsiccat is distributed on exchange to the following herbaria: ASU, B, BG, CANB, CBM, CHR, DOV, FH, GZU, H, HMAS, M, MIN, S, TSB, TNS, TU, UPS, herb. Lendemer. Distribution of incomplete sets remains as described previously by Lendemer (2003).

## FASCICLE III

**101.** *Hypogymnia physodes* (L.) Nylander  
Det. J.C. Lendemer – June 3, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On a dead tree along the north shore of Mud Run Creek, Mud Run Natural Area, Hickory Run State Park, ca. 1 ½ miles southwest of Albrightsville. – elev. ca. 1300 ft. - UTM 18 446059E 4539244N – Lat. 41° 00' 16"N, Long. 75° 38' 29"W – Assoc. spp.: *Flavoparmelia caperata*, *Punctelia rudecta*, *Parmelia squarrosa*, *Chrismofulvea dialytoides*, *Lecanora strobilina*, *Lepraria* spp.

Thallus corticolous, foliose, soraliate; underside black, brown near lobe tips; soria present on underside of lobe tips; lobes slightly inflated.

James C. Lendemer #863 & Erin Tripp

May 18, 2003

**102.** *Placidium lacinulatum* (Acharius) Breuss var. *atrans* var. nov.<sup>1</sup>  
Dup. Determined (W!) – O. Breuss – July 24, 2003

**UNITED STATES OF AMERICA. MARYLAND. CECIL COUNTY.:** On soil, in a serpentine barren with sparse grass, shrubby cover, and dead pine trees (*Pinus* sp.), on a hillside on the north/east shore of Conowingo Creek, several hundred yards east of Pilot Town Road (across from entrance to Girl Scout Camp), ca. ¾ mile southeast of Pilot, Pilot [Serpentine] Barrens, Nature Conservancy Property. – elev. ca. 300 ft. - UTM 18 397965E 4395175N – Lat. 39° 42' 08"N, Long. 76° 11' 25"W. – Assoc. spp.: *Psora icterica*.

<sup>1</sup> James C. Lendemer: Lichen Herbarium, Department of Botany, The Academy of Natural Sciences of Philadelphia, 1900 Benjamin Franklin Parkway, Philadelphia, Pennsylvania, 19103, USA. – e-mail: lendemer@acnatsci.org

Thallus terricolous, squamulose, esorediate; squamules light to dark brown; perithecia immersed within squamules; perithecial walls dark; spores colorless, broadly ellipsoid, 8-per ascus.

James C. Lendemer #867

May 26, 2003

**103. *Usnea strigosa* (Acharius) Eaton ssp. *major* (Michaux) I.I. Tavares**

Det. J.C. Lendemer – June 4, 2003

Dup. Confirmed (UC!) – I.I. Tavares – June 14, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On a large tree, along NJ Route 555 several hundred yards south of intersection with Railroad Road, Bear Swamp East Natural Area, on the edge of a mixed pine (*Pinus* spp.) / oak (*Quercus*) forest, ca. 4 miles northeast of Newport, ca. 2 miles east of Paynters Crossing, < ½ mile east of Dividing Creek Station, Bear Swamp East Natural Area. – elev. 45 ft. - UTM 18 492354E 4350126N – Lat. 39° 18' 09"N, Long. 75° 05' 19"W – Assoc. spp.: *Flavoparmelia caperata*, *Punctelia rudecta*.

Thallus corticolous, short/shrubby, apotheciate, esorediate, gray-blue; apothecial disks yellow; apothecial cilia not inflated, uneven; fibrils slightly deformed, not inflated; base not blackened; medulla red.

James C. Lendemer *et al.* #868

April 13, 2003

w/ James A. Macklin & Gerry Moore

**104. *Anaptychia palmulata* (Michaux) Vainio**

Det. J.C. Lendemer – June 6, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On a large maple (*Acer* sp.), in a mixed hardwood forest along High Rocks Trail, ca. 1 mile from trail head, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1250 ft. - UTM 17 569651E 4228958N – Lat. 38° 12' 28"N, Long. 80° 12' 16"W – Assoc. spp.: *Biatora longispora*, *Heterodermia* spp., *Pertusaria* spp.

Thallus corticolous, foliose, esorediate, isidia lacking, lobules abundant, loosely attached to substrate.

James C. Lendemer #870 & Moira J. Moody

May 22, 2003

**105. *Biatora longispora* (Degelius) Lendemer & Printzen**

Det. J.C. Lendemer – June 6, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On the mossy bark of a tree on the edge of an old railroad grade, through a mixed hardwood forest, North Face Trail ca. 2 miles from intersection with Tea Creek Mountain Trail, north face of Tea Creek Mountain, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1200 ft. - UTM 17 569692E 4244116N - Lat. 38° 20' 39"N, Long. 80° 12' 09"W – Assoc. spp.: *Pertusaria* spp., *Cladonia* sp.

Thallus corticolous, crustose, blue-gray; apothecia biatorine, orange-yellow; spores ca. 8-per ascus, oblong, colorless, simple.

James C. Lendemer #871 & Moira J. Moody

May 23, 2003

**106. *Biatora longispora* (Degelius) Lendemer & Printzen**

Det. J.C. Lendemer – June 6, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On the mossy bark of a tree on the edge of an old railroad grade, through a mixed hardwood forest, North Face Trail ca. 1.5 miles from intersection with Tea Creek Mountain Trail, north face of Tea Creek Mountain, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1200 ft. - UTM 17 569692E 4244116N - Lat. 38° 20' 39"N, Long. 80° 12' 09"W – Assoc. spp.: *Pertusaria* spp., *Cladonia* sp.

Thallus corticolous, crustose, blue-gray; apothecia biatorine, orange-yellow; spores ca. 8-per ascus, oblong, colorless, simple.

James C. Lendemer #872 & Moira J. Moody

May 23, 2003

**107.** *Chrismofulvea dialyta* (Nylander) Marbach  
Det. J.C. Lendemer – June 7, 2003  
Dup. Confirmed (SZU!) – B. Marbach - June 20, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On a dead tree along the north shore of Mud Run Creek, Mud Run Natural Area, Hickory Run State Park, ca. 1 ½ miles southwest of Albrightsville. – elev. ca. 1300 ft. - UTM 18 446059E 4539244N – Lat. 41° 00' 16"N, Long. 75° 38' 29"W – Assoc. spp.: *Flavoparmelia caperata*, *Punctelia rufecta*, *Parmelia squarrosa*, *Lecanora strobilina*, *Lepraria* spp.

Thallus corticolous, crustose, white, thin to thick, UV-, KOH-; apothecia hemispherical, black, abundant; spores 8-per ascus, brown, 2-celled; hymenium colorless. *Lendemer* 885 (ASU, FH, MIN, NDA, NY) is from the same locality however collected on a different tree on which *Hypogymnia physodes* also occurred. That collection has fewer, more dispersed apothecia and a thinner more dispersed thallus.

James C. Lendemer #884 & Erin Tripp May 18, 2003

**108.** *Candelariella vitellina* (Hoffmann) Müll. Arg.  
Dup. Determined (NY!) – Richard C. Harris – July 8, 2003

**UNITED STATES OF AMERICA. MARYLAND. CECIL COUNTY.:** On rock, in a serpentine barren with sparse grass and shrubby cover, and dead pine trees (*Pinus* sp.), on a hillside on the north/east shore of Conowingo Creek, several hundred yards east of Pilot Town Road (across from entrance to Girl Scout Camp), ca. ¾ mile southeast of Pilot, Pilot [Serpentine] Barrens, Nature Conservancy Property. – elev. ca. 300 ft. - UTM 18 397965E 4395175N – Lat. 39° 42' 08"N, Long. 76° 11' 25"W. – Assoc. spp.: *Caloplaca subsoluta*, *Caloplaca* sp., *Buellia spuria*, *Xanthoparmelia somoensis*.

James C. Lendemer #891 May 26, 2003

**109.** *Heterodermia squamulosa* (Degelius) W.L. Culberson  
Det. J.C. Lendemer – June 8, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On a large maple (*Acer* sp.), in a mixed hardwood forest along High Rocks Trail, ca. 1 mile from trail head, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1250 ft. - UTM 17 569651E 4228958N – Lat. 38° 12' 28"N, Long. 80° 12' 16"W – Assoc. spp.: *Punctelia appalachensis*, *Phaeophyscia rubropulchra*, *Biatora longispora*, *Pertusaria* spp., *Pyxine sorediata*.

Thallus corticolous, foliose, esorediate; lobules abundant on lobe margins and sparse over lobe surface.

James C. Lendemer #896 & Moira J. Moody May 22, 2003

**110.** *Punctelia appalachensis* (Culberson) Krog  
Det. J.C. Lendemer – June 8, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On a large maple (*Acer* sp.), in a mixed hardwood forest along High Rocks Trail, ca. 1 mile from trail head, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1250 ft. - UTM 17 569651E 4228958N – Lat. 38° 12' 28"N, Long. 80° 12' 16"W – Assoc. spp.: *Phaeophyscia rubropulchra*, *Pertusaria* spp., *Biatora longispora*, *Heterodermia appalachensis*, *Pyxine sorediata*.

Thallus corticolous, foliose, blue-gray/green, esorediate; lobules abundant; medulla white, C-; underside black with marginal brown zone.

James C. Lendemer #897 & Moira J. Moody May 22, 2003

**111.** *Allocetraria oakesiana* (Tuckerman) Randlane & Thell  
Det. J.C. Lendemer – June 8, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On the bases of small birches (*Betula* sp.), along the south/east shore of Tea Creek, along Tea Creek Trail ca. ½ mile

from intersection with North Face Trail, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1000 ft. – UTM 17 567883E 4243954N - Lat. 38° 21' 33"N, Long. 80° 12' 37"W – Assoc. spp.: *Flavoparmelia caperata*, *Pyxine sorediata*, *Cladonia sp.*, *Graphis scripta*, *Biatora longispora*, *Pertusaria spp.*

Thallus corticolous, foliose, green, sorediate; soralia on lobe margins; apothecia rare, disks red/brown.

James C. Lendemer #898 & Moira J. Moody

May 23, 2003

**112. *Cladonia verticillata* (Hoffmann) Schaeerer**

Det. J.C. Lendemer – June 9, 2003

Dup. Confirmed (H!) – T. Ahti – August 12, 2003

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On bryophytes and cushions of conifer needles, in a moist ridge-top conifer forest with little light, along Big Beechy Trail at intersection with District Line Trail, Sugar Creek Mountain, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1250 ft. - UTM 17 565363E – Lat. 38° 19' 15"N, Long. 80° 15' 08"W – Assoc. spp.: *Cladonia furcata*, *Cladonia squamosa*.

Thallus terricolous; primary squamules sparse, esorediate; cortex UV-, KOH-; podetia tall, cupped, esorediate, sparsely squamulose, proliferating from the center (and rarely from the margins); apothecia brown.

James C. Lendemer #899 & Moira J. Moody

May 21, 2003

**113. *Cladonia submittis* A. Evans**

Det. J.C. Lendemer – August 18, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On organic debris (mostly pine needles and bark), under a large dead pitch pine (*Pinus rigida*), in sandy barrens on the edge of a pine (*Pinus*) / oak (*Quercus*) forest, west of Chatsworth Lake, along NJ Route #532, ca. ¾ mile west of Chatsworth. – elev. ca. 90 ft. - UTM 18 538663E 4407083N – Lat. 39° 48' 53"N, Long. 74° 32' 54"W – *Cladonia cristatella*, *Cladonia floerkeana*, *Cladonia uncialis*, *Cladonia atlantica*, *Cladonia grayi*.

Thallus terricolous, forming low dissected cushions over ground, UV-; podetia coarse at base, much branched.

James C. Lendemer et al. #1114

July 31, 2003

w/ Sasha Eisenmen, Jinshaung Ma, James A. Macklin, and Gerry Moore

**114. *Nadvornikia sorediata* R.C. Harris**

Dup. Determined (NY!) - R.C. Harris – June 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On thin, loose bark of a small tree, in a swampy old-growth forest of *Liriodendron*, *Liquidambar*, *Quercus*, and *Acer rubrum* with a sparse *Vaccinium* / *Smilax* understory, along Nature Conservancy property boundary, Bear Swamp West, ca. 2 miles northeast of Newport. – elev. ca. 10 ft. - UTM 18 488493E 4349984N – Lat. 39° 18' 04"N, Long. 75° 08' 01"W – *Pertusaria multipunctoides*, *Fissurina insidiosa*, *Graphis scripta*, *Phaeographis inusta*.

Thallus corticolous, crustose, thin, green-gray, soraliate.

James C. Lendemer et al. #874

April 26, 2003

w/ Gerry Moore et al.

**115. *Candelariella efflorescens* R.C. Harris & Buck**

Det. J.C. Lendemer – June 25, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On mossy bark of oaks (*Quercus*), along an unnamed sand road, in an oak dominated pine (*Pinus rigida*, *Pinus spp.*) – oak (*Quercus*) forest, on the edge of an atlantic white cedar (*Chamaecyparis thyoides*) swamp, ¼ mile north of Quaker Bridge, Batsto Natural Area, Wharton State Forest. – elev. ca. 30 ft. - UTM 18 528615E 4395648N – Lat. 39° 42' 44"N, Long. 74° 39' 58"W – Assoc. spp.: *Heterodermia speciosa*, *Pyxine sorediata*, *Pertusaria paratuberculifera*, *Flavoparmelia caperata*, *Punctelia rudecta*, *Loxospora pustulata*, *Lecanora hybocarpa*.

Thallus corticolous, crustose, areolate; areoles breaking down into soredia, KOH-, UV-; apothecia sparse; epihymenium orange/brown, KOH-; hymenium colorless; ascospores >8-per ascus, colorless, obtuse-ellipsoid.

James C. Lendemer #967 & Leonard H. Smith II

June 23, 2003

**116. *Candelariella efflorescens* R.C. Harris & Buck**

Det. J.C. Lendemer – July 2, 2003

Dup. Confirmed (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the trunk of a large oak (*Quercus*) in an oak (*Quercus*) dominated pine (*Pinus*) / oak (*Quercus*) forest, at the intersection of three unnamed sand roads, Washington, Wharton State Forest. – elev. 15 ft. - UTM 18 536325E 4392550N – Lat. 39° 41' 02"N, Long. 74° 34' 35"W – Assoc. spp.: *Punctelia rudecta*, *Phaeophyscia rubropulchra*.

Thallus corticolous, crustose, areolate; areoles breaking down into soredia, KOH-, UV-; apothecia sparse; epihymenium orange/brown, KOH-; hymenium colorless; ascospores >8-per ascus, colorless, obtuse-ellipsoid.

James C. Lendemer et al. #995

July 1, 2003

w/ Zephyr Johnson and Randy Miller

**117. *Trapeliopsis flexuosa* (Fries) Coppins & P. James**

Det. J.C. Lendemer – July 2, 2003

Dup. Confirmed (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. ATLANTIC COUNTY.:** On the bark of a pitch pine (*Pinus rigida*), in a mixed pine (*Pinus echinata*, *P. rigida*, and *P. virginiana*) / oak (*Quercus* spp.) forest, along an unnamed sand road, ca. 1 mile northwest of Batsto, Batsto Natural Area, Wharton State Forest. – elev. <10 ft. - UTM 18 528838E 4388439N – Lat. 39° 38' 50"N, Long. 74° 39' 50"W – Assoc. spp.: *Punctelia subrudecta*, *Cladonia* spp., *Trapeliopsis flexuosa*, *Hypocenomyce anthracophila*.

Thallus corticolous, crustose, sorulate; areoles small, green/blue; soralia abundant, greenish/blue.

James C. Lendemer et al. #996

July 1, 2003

w/ Zephyr Johnson and Randy Miller

**118. *Hypocenomyce scalaris* (Acharius) Choisy**

Det. J.C. Lendemer – July 2, 2003

Dup. Confirmed (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. ATLANTIC COUNTY.:** On the bark of a pitch pine (*Pinus rigida*), in a mixed pine (*Pinus echinata*, *P. rigida*, and *P. virginiana*) / oak (*Quercus* spp.) forest, along an unnamed sand road, ca. 1 mile northwest of Batsto, Batsto Natural Area, Wharton State Forest. – elev. <10 ft. - UTM 18 528838E 4388439N – Lat. 39° 38' 50"N, Long. 74° 39' 50"W – Assoc. spp.: *Punctelia subrudecta*, *Cladonia* spp., *Trapeliopsis flexuosa*, *Hypocenomyce anthracophila*.

Thallus corticolous, squamulose; squamules green, sorulate, C+ red. Some specimens are a mixture with *H. anthracophila* (squamules, C-).

James C. Lendemer et al. #994

July 1, 2003

w/ Zephyr Johnson and Randy Miller

**119. *Arthonia rubella* (Fée) Nylander**

Dup. Determined (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. BRUNSWICK COUNTY.:** On the bark of a large tree, in a lot slated for residential construction, along an unnamed gravel road through a subdivision, just over a low hill from a tidal marsh, Middle Island, Bald Head Island. – elev. ca. 10 ft. - UTM 18 224665E 3750576N – Lat. 33° 51' 41"N, Long. 77° 58' 34"W – Assoc. spp.: *Phaeographis dendritica*, *Theletremataceae* spp., *Phaeographis lobata*, *Dirinaria picta*, *Fissurina insidiosa*.

Thallus corticolous, crustose, thin, white, esorediate; apothecia branched, red/brown; spores colorless, ca. 4-5 celled, transversely septate, 8-per ascus, ca. 60 $\mu$ m x 30 $\mu$ m, obtuse ellipsoid, macrocephalic; cortex KOH-, UV-; medulla KOH-, UV-.

James C. Lendemer #1013 & Rebecca Yahr

July 5, 2003

- 120.** *Fissurina insidiosa* Knight & Mitten  
Det. J.C. Lendemer – July 7, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. BRUNSWICK COUNTY.:** On the bark of a large tree, in a lot slated for residential construction, along an unnamed gravel road through a subdivision, just over a low hill from a tidal marsh, Middle Island, Bald Head Island. – elev. ca. 10 ft. - UTM 18 224665E 3750576N – Lat. 33° 51' 41"N, Long. 77° 58' 34"W – Assoc. spp.: *Phaeographis dendritica*, *Thelotremaeae* spp., *Phaeographis lobata*, *Dirinaria picta*, *Arthonia rubella*.

Thallus corticolous, crustose, thick, green, esorediate; cortex KOH-, UV-; lirellae immersed, not carbonized; spores colorless, ca. 8-per ascus, 4-celled, transversely septate, 15 $\mu$ m x 9 $\mu$ m.

James C. Lendemer #1014 & Rebecca Yahr

July 5, 2003

- 121.** *Byssoloma meadii* (Tuckerman) Ekman  
Det. J.C. Lendemer – July 7, 2003  
Dup. Confirmed (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CRAVEN COUNTY.:** On *Lyonia*, in a wet, *Nyssa* dominated pocosin with a *Lyonia* understory, along the east shore of Catfish Lake, along Forest Service Road #158, ca. ½ mile north of intersection with Catfish Lake Road, Croatan National Forest. – elev. ca. 10 ft. - UTM 18 308416E 3867809N – Lat. 34° 56' 11"N, Long. 77° 05' 52"W – Assoc spp.: *Gyalideopsis* sp., *Byssoloma* sp., *Lecanora* spp., *Trichothelium cestrense*.

Thallus corticolous, crustose, thin, green, UV+ orange; apothecial margins fuzzy, disks pale tan to somewhat dark; spores colorless, tapering to varying degrees, 1-4 celled, ca. 12-13 $\mu$ m x 2-3 $\mu$ m. Small thalli of another *Byssoloma* species are also present on some specimens however the apothecial disks are darker (purple-brown), and the thallus is UV-. Brodo et al. (2001) included *B. pubescens* Vězda ex Harris as a synonym of *B. meadii* however, both names remain on the current North American checklist (Esslinger, 1997). The synonymy is formally validated here<sup>2</sup>.

James C. Lendemer #1017 & Rebecca Yahr

July 4, 2003

- 122.** *Bactrospora mesospora* R.C. Harris  
Det. J.C. Lendemer – July 7, 2003  
Dup. Confirmed (NY!) – R.C. Harris – July 24, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. BRUNSWICK COUNTY.:** On the bark of an oak (*Quercus*), in a pine (*Pinus*) – oak (*Quercus*) sand scrub community, just east of NC Route #17, 1 mile south of intersection with road (NC Route #113) to Orton Plantation, ca. 8 miles north of intersection of NC Routes #113 & #17, southwest of Wilmington. – elev. ca. 35 ft. - UTM 17 768340E 3779477N – Lat. 34° 07' 25"N, Long. 78° 05' 26"W – Assoc. spp.: *Parmotrema* spp., *Lecanora cupressi*, *Lecanora louisianae*, *Buellia* sp., *Hypotrachyna osseoalba*, *Hypotrachyna livida*.

Thallus corticolous, crustose, thin, white; apothecia black, margins often excluded; spores colorless, ca. 8-per ascus, narrow, thread-like, ca. 10-celled, 36 $\mu$ m x 2.25 $\mu$ m.

James C. Lendemer #1019 & Rebecca Yahr

July 5, 2003

- 123.** *Calicium hyperelloides* Nylander  
Dup. Determined (NY!) - R.C. Harris – September 4, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. BRUNSWICK COUNTY.:** On bark of a tree at eye level (ca. 6 ft.), along the shore of a tidal marsh, on the edge of a mixed hardwood forest, several hundred feet south of a gravel road, at the terminus of a large path, Middle Island, Bald Head Island. –

elev. ca. 5 ft. - UTM 18 223493E 3751073N – Lat. 33° 51' 56"N, Long. 77° 59' 20"W – Assoc spp.: *Lepraria* sp., *Lecanora* spp., *Pseudoparmelia* *uleana*.

Thallus corticolous, crustose, thin to thick, white; cortex UV+ dull orange/pink; spores brown, 2-celled, ellipsoid, slightly constricted, pointed at ends, 10-13 $\mu$ m x 4-5 $\mu$ m.

James C. Lendemer #1023 & Rebecca Yahr

July 5, 2003

**124. *Sarcogyne regularis* Körber**

Det. J.C. Lendemer – July 9, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On an old stone bridge, over a small stream along an unnamed sand/gravel road, ca. ½ mile west of intersection with May's Landing Road, ca. ½ mile east of intersection with Union Road. – elev. ca. 80 ft. – Assoc. spp: *Verrucaria calkinsiana*, *Caloplaca* sp., *Verrucaria* sp., *Lecanora dispersa*.

Thallus saxicolous, crustose, immersed in substrate, KOH-; apothecia pale reddish to black, disks pruinose; spores colorless, broadly ellipsoid, 1-celled, >8 (many) spores per ascus, 2 $\mu$ m x 4 $\mu$ m.

James C. Lendemer et al. #1031

July 8, 2003

w/ James A. Macklin & Gerry Moore

**125. *Cladonia subcariosa* Nylander s. lat.**

Det. J.C. Lendemer – July 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** On sandy soil with bryophytes, on the edge of an open meadow, along an unnamed sand/gravel road, ca. ½ mile west of intersection with May's Landing Road, ca. ½ mile east of intersection with Union Road. – elev. ca. 80 ft. – Assoc. spp: *Flavoparmelia caperata* (terricolous), *Cladonia grayi*, *Cladonia* spp.

Thallus terricolous, esorediate; podetia short, lacking cups, esorediate, occasionally with large esorediate squamules, apothecia brown; squamules esorediate, KOH-, C-.

James C. Lendemer et al. #1037

July 8, 2003

w/ James A. Macklin & Gerry Moore

**126. *Thelotrema adjectum* Nylander**

Dup. Determined (NY!) - R.C. Harris – September 4, 2003

**UNITED STATES OF AMERICA. NORTH CAROLINA. CRAVEN COUNTY.:** On the bark of a tree on the margins of a freshwater swamp, bordering a mixed forest of *Magnolia*, *Ilex*, *Quercus*, etc., along a tributary to Otter Creek, several hundred yards northwest of Flanner Beach Road, ca. ½ mile from terminus of Flanner Beach Road (Flanner Beach Camp Ground), Croatan Game Lands. – elev. ca. 25 ft. - UTM 18 321858E 3872544N – Lat. 34° 58' 54"N, Long. 76° 57' 06"W – Assoc. spp.: *Opegrapha* sp., *Lecanora* sp.

Thallus corticolous, crustose, thin, blue-white, esorediate, lacking isidia; apothecia immersed in substrate; exciple not carbonized; spores 1-4 per ascus, oblong, 1-4 x 15 celled, muriform, ca. 92-106 $\mu$ m x 22 $\mu$ m, colorless turning pale brown when mature; paraphyses simple.

James C. Lendemer #1048 & Rebecca Yahr

July 4, 2003

**127. *Parmotrema hypotropum* (Nylander) Hale**

Det. James C. Lendemer – January 4, 2004

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the branches of an oak (*Quercus*), on the edge of a large clearing with sparse oaks (*Quercus*) and bordered by an unnamed stream and a pine dominated pine – oak forest, Hampton Furnace, ca. 3 miles northeast of Atsion, Wharton State Forest. – elev. 40 ft. - UTM 18 526729E 4401707N – Lat. 39° 45' 54"N, Long. 74° 41' 16"W. – Assoc. spp.: *Pyrrhospora varians*, *Punctelia rufodicta*, *Punctelia subrufodicta*, sterile sorediate crustose spp.

Thallus corticolous, foliose, sorediate, blue-gray, UV-; medulla white, KOH+ yellow turning red; underside mostly white with small black or brown patches; soralia marginal; lobes broad; marginal cilia sparse to abundant.

James C. Lendemer #1721 & Moira J. Moody

January 4, 2004

- 128.** *Phaeophyscia pusilloides* (Zahlbruckner) Esslinger  
Dup. Determined (NDA!) – T.L. Esslinger – February 20, 2004

**UNITED STATES OF AMERICA. WEST VIRGINIA. POCAHONTAS COUNTY.:** On a large maple (*Acer* sp.), in a mixed hardwood forest along High Rocks Trail, ca. 1 mile from trail head, Cranberry Wilderness, Monongahela National Forest. – elev. ca. 1250 ft. - UTM 17 569651E 4228958N – Lat. 38° 12' 28"N, Long. 80° 12' 16"W – Assoc. spp.: *Phaeophyscia rubropulchra*, *Pertusaria* spp., *Biatora longispora*, *Heterodermia appalachensis*, *Pyxine sorediata*.

Thallus corticolous, foliose, closely attached to substrate, gray, soraliate; underside black; rhizines abundant, short, black with white tips; medulla white; soralia marginal, capitate on short ± erect (upturned) lobes; soredia gray/green, farinose.

James C. Lendemer #1453 & Moira J. Moody

May 22, 2003

- 129.** *Lecanora thysanophora* R.C. Harris  
Det. J.C. Lendemer – September 8, 2003  
Dup. Confirmed (NY!) – R.C. Harris – October 22, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On the trunk of a maple (*Acer*), in an open forest of *Acer*, *Quercus*, and *Pinus* with a dense *Vaccinium* understory, on the margins of a dense cedar swamp, along a road used for timber harvesting, west of Red Road (Stevenson Road), Oswego River Preserve. – elev. ca. 100 ft. - UTM 18 550794E 4402313N – Lat. 39° 46' 16"N, Long. 74° 24' 25"W – Assoc. spp.: *Lecanora rugosella*, *Flavoparmelia caperata*, *Catillaria atropurpurea*, *Loxospora pustulata*.

Thallus corticolous, crustose, leprose, sorediate, KOH+ yellow (faint), C-, UV-; prothallus present, conspicuous, white, fibrous, often with a thin blackish-gray zone; soredia forming a continuous thallus.

James C. Lendemer #1176 & Moira J. Moody

September 6, 2003

- 130.** *Cladonia rappii* A. Evans  
Det. J.C. Lendemer – September 9, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On sandy soil, in a low swale with *Drosera*, along an unnamed sand road, west of Red Road (Stevenson Road), Oswego River Preserve. – elev. ca. 100 ft. - UTM 18 550897E 4402317N – Lat. 39° 46' 16"N, Long. 74° 24' 21"W – Assoc. spp.: *Cladonia grayi*, *Cladonia cristatella*, *Cladonia strepsilis*.

Thallus terricolous, fruticose; “primary” squamules sparse to abundant, esorediate; podetia forming tall, stacked cups, flat not concave.

James C. Lendemer #1199 & Moira J. Moody

September 6, 2003

- 131.** *Pycnothelia papillaria* Dufour  
Det. J.C. Lendemer – September 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On sandy soil, on a mound of recently disturbed soil, along Red Road (Stevenson Road) at its intersection with Long Road, through a pine (*Pinus rigida*, *Pinus virginiana*) dominated pine – oak (*Quercus*) forest, Oswego River Preserve. – elev. ca. 100 ft. - UTM 18 550557E 4401443N – Lat. 39° 45' 48"N, Long. 74° 24' 35"W – Assoc. spp.: *Cladonia strepsilis*.

Thallus terricolous, esorediate, thin, blue-gray, UV-; podetia short, thick, inflated.

James C. Lendemer #1204 & Moira J. Moody

September 6, 2003

- 132.** *Cladonia coniocraea* (Flörke) Sprengel  
Det. J.C. Lendemer – September 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. BURLINGTON COUNTY.:** On a rotting log in partial sun, in a dense cedar swamp with abundant *Sphagnum* and no standing water, along a road used for timer harvesting, west of Red Road (Stevenson Road), Oswego River Preserve. – elev. ca. 100 ft. - UTM 18 550694E 4402058N – Lat. 39° 46' 08"N, Long. 74° 24' 29"W – Assoc. spp.: *Cladonia macilenta* (*barbatic acid chemotype*).

Thallus lignicolous, fruticose, sorediate, UV-; “primary” squamules green, lobed, large, underside white, PD+ red; podetia short to tall, slender to somewhat thick, tapering, sorediate; soredia covering entire podetium, though often absent from some portions, lower portions lacking a cortex or with small patches of poorly defined cortex near base.

James C. Lendemer #1206 & Moira J. Moody

September 6, 2003

- 133. *Ochrolechia arborea* (Kreyer) Almborn**  
Det. J.C. Lendemer – September 25, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On the trunk of a red maple (*Acer rubrum*), in a large sunny opening in a hardwood swamp with coniferous margins, east of Elmore Road, .3 miles north of CT Route #272, Holleran Swamp Preserve, northwest of Norfolk. – elev. ca. 420 ft. – UTM 18 648622E 4655385N – Lat. 42° 02' 18"N, Long. 73° 12' 16"W – Assoc spp.: sterile sorediate spp., *Hypogymnia physodes*, *Parmelia sulcata*, *Ropalospora chlorantha*, *Lecanora thysanophora*.

Thallus corticolous, crustose, thick, smooth to verruculose, white, soraliate, UV+ yellow; soralia well defined, yellowish, C+ red, UV+ yellow/orange.

James C. Lendemer et al. #1307  
w/ participants of 2003 Andrews Foray

September 20, 2003

- 134. *Peltigera neckeri* Hepp ex Müll. Arg.**  
Det. J.C. Lendemer – September 25, 2003  
Dup. Confirmed (H!) – O. Vitikainen – February 26, 2004

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On moss over a shaded calcareous rock, hillside with large limestone outcrop in a mixed hardwood forest, northwest corner of Mountain View Cemetery, northwest of Sand Road, North Canaan. - elev. ca. 300 m. – UTM 18 637447E 4652685N – Lat. 42° 00' 58"N, Long. 73° 20' 24"W – Assoc. spp. *Peltigera lepidophora*, *Pertusaria globularis*, *Myelochroa aurulenta*, *Heterodermia speciosa*, *Aspicilia* sp., *Acarospora* sp., *Punctelia rudecta*, *Dimerella pineti*.

Thallus muscicolous, foliose, esorediate, isidia lacking, apothecia present; cortex gray; underside brown/black, margins white, rhizines sparse; apothecia saddle-shaped, well curled, black, small.

James C. Lendemer et al. #1309  
w/ Bruce Allen, William R. Buck, and Richard C. Harris

September 21, 2003

- 135. *Pertusaria globularis* (Acharius) Tuckerman**  
Det. J.C. Lendemer – September 25, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On moss over shaded calcareous rock, hillside with large limestone outcrop in a mixed hardwood forest, northwest corner of Mountain View Cemetery, northwest of Sand Road, North Canaan. - elev. ca. 300 m. – UTM 18 637447E 4652685N – Lat. 42° 00' 58"N, Long. 73° 20' 24"W – Assoc. spp. *Peltigera praetextata*, *Peltigera evansiana*, *Peltigera neckeri*, *Myelochroa aurulenta*, *Heterodermia speciosa*, *Aspicilia* sp., *Acarospora* sp., *Punctelia rudecta*, *Dimerella pineti*.

Thallus saxicolous/muscicolous, crustose, thin, esorediate, isidiate, blue-gray; margins smooth, blue-gray; isidia abundant, not brown tipped; cortex C-.

James C. Lendemer et al. #1310  
w/ Bruce Allen, William R. Buck, and Richard C. Harris

September 21, 2003

- 136. *Phaeophyscia endococcinoides* (Poelt) Esslinger**  
Det. J.C. Lendemer – September 26, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On moss over shaded calcareous rock, hillside with large limestone outcrop in a mixed hardwood forest, northwest corner of Mountain View Cemetery, northwest of Sand Road, North Canaan. – elev. ca. 300 m. – UTM 18 637447E 4652685N – Lat. 42° 00' 58"N, Long. 73° 20' 24"W – Assoc. spp. *Peltigera praetextata*, *Peltigera lepidophora*, *Peltigera neckeri*, *Myelochroa aurulenta*, *Heterodermia speciosa*, *Aspicilia sp.*, *Acarospora sp.*, *Punctelia rufecta*, *Dimerella pineti*, *Pertusaria globularis*.

Thallus saxicolous/muscicolous, foliose, esorediate, apotheciate, loosely attached to substrate; medulla red.

James C. Lendemer et al. #1311 September 21, 2003  
w/ Bruce Allen, William R. Buck, and Richard C. Harris

**137. *Agonimia opuntiella* (Buschardt & Poelt) Vězda<sup>3</sup>**  
Det. J.C. Lendemer – September 26, 2003  
Dup. Confirmed (NY!) – R.C. Harris – December 24, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On soil with mosses, on the rim of an old limestone quarry, ca. ½ mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. – UTM 18 636036E 4648895N – Lat. 41° 58' 56"N, Long. 73° 21' 28"W – Assoc. spp.: *Placidium sp.*, *Bacidia sp.*

Thallus terricolous/lignicolous, squamulose, sorediate; squamules green to brown-gray, with stiff colorless cilia/hairs.

James C. Lendemer et al. #1340 September 21, 2003  
w/ participants of 2003 A. Leroy Andrews Foray

**138. *Mycocalicium subtile* (Persoon) Szatala**  
Dup. Determined (NY!) – R.C. Harris – November 17, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On a decorticate tree trunk, in a large sunny opening in a hardwood swamp with coniferous margins, east of Elmore Road, .3 miles north of CT Route #272, Holleran Swamp Preserve, northwest of Norfolk. – elev. ca. 420 ft. – UTM 18 648622E 4655385N - Lat. 42° 02' 18"N, Long. 73° 12' 16"W – Assoc spp.: *Parmelia squarrosa*.

Thallus lignicolous/corticoloous, immersed within substrate; spores 2-celled, ellipsoid, transversely septate, brown, 6-9.5µm x 2-3µm; asci disintegrating; capitulum black.

James C. Lendemer et al. #1341 September 20, 2003  
w/ participants of 2003 A. Leroy Andrews Foray

**139. *Peltigera rufescens* (Wiess) Humb.**  
Det. J.C. Lendemer – September 29, 2003  
Dup. Confirmed (H!) – O. Vitikainen – February 26, 2004

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On calcareous sandy soil, on the rim of an old limestone quarry, ca. ½ mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. – UTM 18 636036E 4648895N – Lat. 41° 58' 56"N, Long. 73° 21' 28"W – Assoc. spp.: *Placidium sp.*, *Cladonia pocillum*.

Thallus terricolous, foliose, gray-brown, esorediate, isidia lacking; lobes narrow, with a heavy white tomentum, margins strongly upturned; underside dark, pale white near margins; veins raised; rhizines short.

James C. Lendemer et al. #1356 September 21, 2003  
w/ participants of 2003 A. Leroy Andrews Foray

**140. *Peltigera neckeri* Hepp ex Müll. Arg.**  
Dup. Determined (H!) – O. Vitikainen – February 26, 2004

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On mosses over a large limestone boulder, in a dense mixed-hardwood forest, on the rim of an old limestone quarry, ca.  $\frac{1}{2}$  mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. - UTM 18 636036E 4648895N – Lat.  $41^{\circ} 58' 56''$ N, Long.  $73^{\circ} 21' 28''$ W – Assoc. spp.: *Phaeophyscia squarrosa*, *Anaptychia palmulata*, *Leptogium cyanescens*.

Thallus muscicolous/saxicolous, foliose, esorediate, isidia lacking, lobules abundant; upper surface smooth, dull gray-brown; lower surface pale, darker towards center.

James C. Lendemer et al. #1359  
w/ participants of 2003 A. Leroy Andrews Foray

September 21, 2003

**141. *Cladonia pocillum* (Acharius) Grognot**  
Det. J.C. Lendemer – September 29, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On calcareous sandy soil, on the rim of an old limestone quarry, ca.  $\frac{1}{2}$  mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. - UTM 18 636036E 4648895N – Lat.  $41^{\circ} 58' 56''$ N, Long.  $73^{\circ} 21' 28''$ W – Assoc. spp.: *Placidium sp.*, *Peltigera rufescens*.

Thallus terricolous, “primary” squamules large, thick, nearly foliose; podetia short, gray-green, cupped, esorediate; apothecia brown, along margins of the cups.

James C. Lendemer et al. #1357  
w/ participants of 2003 A. Leroy Andrews Foray

September 21, 2003

**142. *Cladonia conista* A. Evans**  
Det. J.C. Lendemer – December 12, 2003  
Dup. Confirmed (NY!) – R.C. Harris – December 24, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On shaded disturbed soil, along an abandoned road, along the rim of an old limestone quarry, ca.  $\frac{1}{2}$  mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. - UTM 18 636036E 4648895N – Lat.  $41^{\circ} 58' 56''$ N, Long.  $73^{\circ} 21' 28''$ W – Assoc. spp.: *Cladonia macilenta*.

Thallus terricolous, “primary” squamules sparse to absent, small, not lobed, underside white; podetia cupped, short, wide, sorediate; apothecia/pycnidia brown.

James C. Lendemer et al. #1358  
w/ participants of 2003 A. Leroy Andrews Foray

September 21, 2003

**143. *Cladonia subtenuis* (Abbeyes) Mattick**  
Det. J.C. Lendemer – October 1, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On thin soil over granite ledge, on the edge of a mixed hardwood-conifer forest, bordering extensive granitic boulders, Sam Yankee Woodlot, Great Mountain Forest, east of Canaan Mountain Road, Canaan. – elev. ca. 1300 ft. - UTM 18 642841E 4645858N – Lat.  $41^{\circ} 57' 13''$ N, Long.  $73^{\circ} 16' 36''$ W – Assoc. spp.: *Dimerella pineti*, *Cladonia squamosa*, *Xanthoparmelia somloensis*, *Xanthoparmelia conspersa*.

Thallus terricolous, podetia abundantly branched, white, esorediate, lacking a cortex, UV-; stereome pale, UV+ blue-white.

James C. Lendemer et al. #1360  
w/ participants of 2003 A. Leroy Andrews Foray

September 20, 2003

**144. *Physcia stellaris* (L.) Nylander**  
Det. J.C. Lendemer – October 2, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On the bark of small trees, on the rim of an old limestone quarry, ca.  $\frac{1}{2}$  mile north of CT Route #126, west of Sand Road, Canaan. – elev. ca. 600-800 ft. - UTM 18 636036E 4648895N – Lat.  $41^{\circ} 58' 56''$ N, Long.  $73^{\circ} 21' 28''$ W – Assoc. spp.: *Arthonia sp.*, *Lecania nagelii*.

Thallus corticolous, foliose, esorediate, isidia lacking, apothecia abundant; apothecia pruinose, disks brown to purple-blue; spores 8-per ascus, with angular locules, 2-celled, brown, 16-17 $\mu$ m x 8 $\mu$ m; rhizines abundant, pale; medulla KOH-; paraphyses colorless, slender, not branched, little apically swollen.

James C. Lendemer *et al.* #1368  
w/ participants of 2003 A. Leroy Andrews Foray

September 21, 2003

**145.** *Lecanora symmicta* (Acharius) Acharius  
Det. J.C. Lendemer – October 2, 2003

**UNITED STATES OF AMERICA. CONNECTICUT. LITCHFIELD COUNTY.:** On old portions of wooden fence along road, at the intersection of Windrow Road and West Side Road, Norfolk. – elev. ca. 1200 ft. - UTM 18 648240E 4648013N – Lat. 41° 58' 20"N, Long. 73° 12' 39"W – Assoc. spp.: *Amandinea* sp., *Lecanora* sp.

Thallus corticolous, crustose, thin, areolate, dispersed, yellow/pale, KOH-; apothecia pale yellow-brown to brownish-yellow, biatorine, epruinose; spores 8-per ascus, colorless, ellipsoid, simple, 10-14 $\mu$ m x 4-5 $\mu$ m; epihymenium brownish; hymenium colorless.

James C. Lendemer *et al.* #1367  
w/ Bruce Allen, William R. Buck, and Richard C. Harris

September 20, 2003

**146.** *Cladonia grayi* G. Merrill ex Sandstede  
Det. J.C. Lendemer – October 17, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On exposed organic debris and over bryophytes, on the disturbed margins of a road along a powerline cut, on an exposed ridge north of Drakes Creek, Drakes Creek Gorge, northwest of Unionville, Lehigh Gorge State Park. – elev. 1600 ft. - UTM 18 441827E 4536512N - Lat. 40° 58' 47"N, Long. 75° 41' 29"W – Assoc. spp.: *Cladonia* spp.

Thallus lignicolous/muscicolous, fruticose, UV+ blue-white; “primary” squamules abundant, small, disappearing as thallus ages; podetia short to tall, cupped, coarsely granular sorediate to slightly squamulose, proliferating from margins; apothecia brown.

James C. Lendemer #1424 & Moira J. Moody

October 16, 2003

**147.** *Dictyocatenulata alba* Finley & E. F. Morris  
Det. J.C. Lendemer – October 17, 2003

**UNITED STATES OF AMERICA. PENNSYLVANIA. CARBON COUNTY.:** On the bark of a birch tree (*Betula*), along the north banks of Drakes Creek, in a mixed hardwood forest of *Acer* and *Betula* spp., Drakes Creek Gorge, northwest of Unionville, Lehigh Gorge State Park. – elev. ca. 1000 ft. - UTM 18 441081E 4535938N – Lat. 40° 58' 28"N, 75° 42' 01"W – Assoc. spp.: sterile sorediate crustose spp., *Biatora longispora*, *Phaeophyscia rubropulchra*.

Thallus corticolous, crustose, thin, greenish, esorediate; +/- globose conidia produced on tall pale, slender stalks. See Lendemer & Harris (in press) for a discussion of the history, distribution, and recognition of this species as a lichenized fungus.

James C. Lendemer #1425 & Moira J. Moody

October 16, 2003

**148.** *Cladonia atlantica* A. Evans  
Det. J.C. Lendemer – December 6, 2002  
Dup. Confirmed (H!) – T. Ahti – March 10, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. CUMBERLAND COUNTY.:** Growing on organic matter (needles of pitch pine (*Pinus rigida*)), in an open forest of *Pinus* spp. (mainly *P. rigida*) and oak (*Quercus* spp.), on bluffs along the west bank of the Manumuskin River, Nature Conservancy Protection Area, 1.5 miles northeast of Port Elizabeth, west of Manumuskin, southeast of Millville. – elev. <20 ft. - UTM 18 502224E 4353540N – Lat. 39° 20' 00"N, Lat. 74° 58' 27"W – Assoc. spp. – *Cladonia subtenuis*, *Cladonia grayi*, *Cladonia caespiticia*.

Thallus growing over organic matter, K-, UV+ blue-white; squamules thin, divided (lobed), esorediate, sparse; podetia tall, sparsely squamulose, apothecia brown. *Lendemer* 512 (*Lich. East N. Amer.* Exs. 42) is from the same locality however the podetia are shorter and densely squamulose.

James C. Lendemer #531 & Leonard H. Smith II

December 2, 2002

**149. *Punctelia subrudecta* auct. Amer.**  
Det. J.C. Lendemer – October 23, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. ATLANTIC COUNTY.:** On the branches of blueberry bushes (*Vaccinium*), on the margins of an abandoned blueberry (*Vaccinium*) farm and a mixed hardwood forest, 1/3 mile south of NJ Route #561, northeast of Germania, southeast of Egg Harbor City, Nature Conservancy Reserve. – elev. ca. 60 ft. – UTM 18 535529E 4372107N - Lat. 39° 29' 59"N, Long. 74° 35' 12"W – Assoc. spp.: *Trapeliopsis flexuosa*, *Lecanora strobilina*, *Punctelia rudenta*, *Myelochroa aurulenta*, *Parmelia squarrosa*, *Parmelia sulcata*, *Hypogymnia physodes*, *Tuckermannopsis fendleri*, *Pertusaria xanthodes*, *Amandinea punctata*, *Amandinea polyspora*, *Buellia* sp., *Usnea strigosa* ssp. *major*.

Thallus corticolous, foliose, loosely attached to substrate, soraliate; underside pale, brown; pseudocyphellae long, often branched; soralia marginal and laminal; medulla white, C+ red; lobe tips often browned; lobes broad, surface smooth not distinctly foveate, epruinose.

Wilhelm & Ladd (1987) first reported *Punctelia perreticulata* Räsänen, a sorediate *Punctelia* species containing lecanoric acid from North America, considering it to have a mid-west/western distribution in North America. Aptroot (2003) broadened the concept of *P. perreticulata* to include the material previously referred to *P. subrudecta* (Nylander) Krog, noting that *P. perreticulata* sensu Wilhelm & Ladd and the material previously referred to *P. subrudecta* could not be consistently distinguished from one another. Further study, of material from throughout North America and Mexico is clearly needed to determine if *P. subrudecta* auct. Amer. should be included within *P. perreticulata*. Thus, I have chosen to distribute this collections under the name *Punctelia subrudecta* auct. Amer., because the specimens are clearly not conspecific with the type of *P. subrudecta* (Nylander) Krog, and may prove to be distinct from *P. perreticulata* sensu Wilhelm & Ladd (1987).

James C. Lendemer *et al.* #1431  
w/ Robert F.C. Naczi and Alfred E. Schuyler

October 21, 2003

**150. *Diploschistes muscorum* (Scopoli) Santesson**  
Det. J.C. Lendemer – October 25, 2003

**UNITED STATES OF AMERICA. NEW JERSEY. ATLANTIC COUNTY.:** On *Cladonia* spp., over compact, gravelly soil, with small grasses and *Cladonia* spp., disturbed roadside, within several yards of mile marker 13, NJ Route 561, 3.6 km. north-northwest of Egg Harbor City. – elev. 80 ft. - UTM 18 528829E 4378746N – Lat. 39° 33' 28"N, Long. 74° 39' 52"W. – Assoc. spp.: *Cladonia subcariosa* s.l., *Cladonia rappii*, *Cladonia* spp.

Thallus lichenicolous, on *Cladonia* spp. (including *Cladonia subcariosa* s.l. and *C. rappii*), white, esorediate; ascomata immersed in thallus; spores muriform, brown/blackish, 25-28 $\mu$ m x 12-13.5 $\mu$ m, obtuse ellipsoid, tapering to one end.

James C. Lendemer *et al.* #1464  
w/ Robert F.C. Naczi & Alfred E. Schuyler

October 21, 2003

#### ACKNOWLEDGEMENTS

First and foremost I wish to thank the following for their companionship during field work Bruce Allen (CT), William R. Buck (CT), Richard C. Harris (CT), Zephyr Johnson (NJ), James A. Macklin (NJ), Randy Miller (NJ), Moira J. Moody (NJ, WV, VA), Gerry Moore (NJ), Robert F.C. Naczi (NJ), Alfred E. Schuyler (NJ), Leonard H. Smith II (NJ), Erin Tripp (PA), Rebecca Yahr (NC). Also, I wish to thank the following for determining or confirming specimens included here: Teuvo Ahti (H), Othmar Breuss (W), Theodore L. Esslinger (NDA), Richard C. Harris (NY), Bernhard Marbach (SZU), Isabelle I. Tavares (UC), Orvo Vitikainen (H).

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#### END NOTES

<sup>1</sup> *Placidium lacinulatum* (Acharius) Breuss var. *atrans* Breuss var. nov.

A varietate typica rhizinis excipulisque nigrescentibus distincta. Ascosporeae 11-15 x 6-8 µm. Spermatia (sub)cylindrica, 4-6 x 1-1.5 µm.

TYPE: USA. MARYLAND. Cecil Co.: On soil with *Psora icterica*, in a serpentine barren with sparse grass, shrubby cover, and dead pine trees (*Pinus* sp.), on a hillside on the north/east shore of Conowingo Creek, several hundred yards east of Pilot Town Road (across from entrance to Girl Scout Camp), ca. ¾ mile southeast of Pilot, Pilot [Serpentine] Barrens, Nature Conservancy Property. elev. ca. 300 ft., UTM 18 397965E 4395175N (Lat. 39° 42' 08"N, Long. 76° 11' 25"W). 26.May.2003. J.C. Lendemer 867 = *Lich. East. N. Amer. Exs. III: 102* (hb. Lendemer, holotype; ASU, B, BG, CANB, CBM, CHR, DOV, FH, GZU, H, HMAS, M, MIN, S, TSB, TNS, TU, UPS, W, isotypes).

Refer to Breuss (2002a) for a detailed description of *P. lacinulatum* and a key to the infraspecific taxa of that species including *P. lacinulatum* var. *atrans*.

<sup>2</sup> *Byssoloma meadii* (Tuckerman) Ekman

*Biatora meadii* Tuckerman, Synops. N. Amer. Lich., 2: 129. 1888. TYPE: Florida, USA. *Mead s.n.* (FH-TUCK, lectotype (selected by Ekman (1996)).

*Bacidia meadii* (Tuckerman) Zahlbrückner, Cat. Lich. Univ., 4: 122. 1926.

*Byssoloma meadii* (Tuckerman) Ekman, *Opera Botanica*, 127: 131. 1996.

Syn. nov. *Byssoloma pubescens* Vězda ex R.C. Harris, More Florida Lichens, pp. 29-30. 1995. TYPE: On oak, Sanford, Seminole Co., Florida, USA. *Rapp s.n.* (NY!, holotype).

As has already been noted the synonymy of *B. pubescens* with *B. meadii* was proposed by Brodo (2001), both names however, remain on the North American Checklist (Esslinger, 1997). The synonymy is confirmed here.

<sup>3</sup> *Agonimia opuntiella* (Buschardt & Poelt) Vězda

*Agonimia opuntiella* is here reported as new to North America. It is a distinctive species, and is easily recognized by its minute green squamulose thallus which produces blastidia (Poelt, 1980) on the underside of the squamules and small colorless hairs on the upper surface. The species can be confused with few other lichens in eastern North America though it does superficially resemble a small *Endocarpon* the hairs and soredia readily distinguish it. A detailed account of this species and its distribution in eastern North America will be provided in a future publication. It should be noted that Breuss (2002) reported *A. opuntiella* from Mexico.

*Specimens Examined.* – USA. CONNECTICUT. Litchfield Co.: Lendemer et al. 1340 = *Lich. East. N. Amer. Exs. III: 137* (ASU, B, BG, CANB, CBM, CHR, DOV, FH, GZU, H, HMAS, M, MIN, NY, S, TSB, TNS, TU, UPS, herb. Lendemer).

# A Preliminary List of the Lichens of New York

RICHARD C. HARRIS<sup>1</sup>

ABSTRACT. – A list of 808 species and 7 subspecific taxa of lichens known to the author to occur in New York state is presented. The new combination *Myriospora immersa* (Fink ex J. Hedrick) R. C. Harris is made.

The rationale for publishing this admittedly incomplete list of New York's lichens is that I am unlikely to ever have time to improve it significantly. The list has been accumulated more or less haphazardly over a period of twenty plus years. Many problems have been left unresolved. It is largely based on specimens held by The New York Botanical Garden (NY), Brooklyn Botanic Garden (BKL) and Buffalo Museum of Science (BUF), to a lesser extent Cornell University (CUP) and Farlow Herbarium, Harvard University (FH) and a few from New York State Museum (NYS). The holdings of the New York State Museum represent a large collection not yet fully studied and will surely add significantly to knowledge of the state's lichen diversity. Surviving specimens for the earliest publication on New York lichens by Halsey (1824) are yet to be studied. Voucher information is available from the author upon request. The collections in BKL and BUF have been databased and copies can also be made available. For those interested, the history of lichenology in New York has been summarized by LaGreca (2001). Some literature records have been included if I consider them reliable, i.e., Brodo (1968) or significant, i.e., Lowe (1939). No doubt I have missed some worthy literature records in recent revisions. Sufficient time has passed since many of the determinations were made so that some of them surely require a fresh look.

Over the years I have occasionally been asked which lichens might be rare or endangered in the state. I have been reluctant to deal with this question. Many undoubtedly rare microlichens are beyond the abilities of anyone other than a specialist to track, requiring chemical analysis or detailed microscopic study for confirmation. It is also rather difficult to pronounce with authority on the rarity of even relatively conspicuous macrolichens as New York State is poorly collected. However, it is, perhaps, useful to include a list of relatively conspicuous lichens which seem rare, some possibly extinct (Appendix 2). With the advent of 'Lichens of North America' (Brodo et al., 2001) it is now possible for non-specialists to identify and monitor many of these species. Lichens restricted to the Arctic-alpine zone of New York's mountains are not included in the list of rare lichens as they are already amply protected but a separate list is provided in case it may prove useful in monitoring climate change (Appendix 3). A short list of Coastal Plain or southern species confined to Long Island is provided with an eye to providing ammunition for increased preservation of critical habitat (Appendix 4). Interestingly some of the species of the Arctic-alpine and Coastal Plain appear at relatively low elevation or inland sites respectively in the Shawangunk Mountains (Dirig, 1994). Two southern macrolichens recently discovered in southern New York might repay monitoring as indicators of climate warming, *Pyxine subcinerea* (Amtoft, 2002) and *Xanthoparmelia subramigera*.

While most personal quirks are minor, one requires a brief comment. It seems useful to retain *Buellia* in a broad sense since Marbach (2000) does not treat many North American taxa nor any entirely saxicolous species. Also, sequencing studies indicate present familial and generic concepts are unsatisfactory but have not yet provided any practical solutions. Marbach (2000) places *Buellia turgescens* Tuckerman in *Amandinea*. He did not see conidia. I have found conidia in several New England collections. They are ellipsoid to narrowly ellipsoid. Therefore the species is retained in *Buellia*. (An additional complication is an extremely similar undescribed taxon in the Midwest which does have typical *Amandinea* type conidia.)

The taxonomy and nomenclature presented here follow generally accepted authorities with occasional corrections or personal eccentricities. Author citations are simplified to the describing author. Families and genera once thought to be lichen forming which I now consider to be not so, e.g., Arthopyreniaceae and *Multiclavula* R. Peterson, are omitted. Lichenicolous fungi are not included. Unidentified species are included when they are the only known New York representative of a genus or if especially common. Some less than reliable determinations are included with '?'. Species described from New York are indicated with an asterisk

<sup>1</sup> Richard C. Harris: Institute of Systematic Botany, The New York Botanical Garden, Bronx, NY, 10458-5126, USA.

(“\*\*”). Species described from New York but not currently accepted are listed in Appendix 1. If no voucher of a taxon is held by NY, the herbarium is indicated after the name or a reference is cited.

## LICHENS OF NEW YORK

- Absconditella lignicola* Vězda & Pišút  
*Absconditella sphagnorum* Vězda  
*Acarospora cervina* A. Massalongo  
*Acarospora fuscata* (Nylander) Arnold  
*Acarospora glaucocarpa* (Acharius) Körber  
*Acarospora moenium* (Vainio) Räsänen  
*Acarospora oligospora* (Nylander) Arnold  
*Acarospora sinopica* (Wahlenberg) Körber  
*Acarospora smaragdula* (Acharius) A. Massalongo *s. lat.*  
*Acarospora veronensis* A. Massalongo  
*Acrocordia megalospora* (Fink) R. C. Harris  
*Adelolecia kolaensis* (Nylander) Hertel & Rambold (Lowe, 1939 as *Lecidea conferenda*)  
*Agonimia gelatinosa* (Acharius) M. Brand & Diederich  
*Ahtiana aurescens* (Tuckerman) Thell & Randlane  
*Alectoria fallacina* Motyka  
*Allocetraria oakesiana* (Tuckerman) Randlane & Thell  
*Amandinea dakotensis* (H. Magnusson) P. May & Sheard  
*Amandinea milliaria* (Tuckerman) P. May & Sheard  
*Amandinea polyspora* (Willey) E. Lay & P. May  
*Amandinea punctata* (Hoffmann) Coppins & Scheidegger  
*Amygdalaria paneola* (Acharius) Hertel & Brodo  
*Anaptychia palmulata* (Michaux) Vainio  
*Anaptychia setifera* Räsänen  
*Anisomeridium carinthiacum* (J. Steiner) R. C. Harris  
*Anisomeridium polypori* (Ellis & Everhart) M. E. Barr  
*Anzia colpodes* (Acharius) Stizenberger  
*Arctoparmelia centrifuga* (L.) Hale  
*Arctoparmelia incurva* (Persoon) Hale (FH)  
*Arctoparmelia subcentrifuga* (Oksner) Hale  
*Arthonia byssacea* (Weigel) Almquist  
*Arthonia caesia* (Körber) Körber  
*Arthonia caudata* Willey  
*Arthonia didyma* Körber  
*Arthonia diffusella* J. Hedrick  
*Arthonia helvola* (Nylander) Nylander  
*Arthonia lapadicola* (Taylor) Branth & Rostrup  
*Arthonia mediella* Nylander (Brodo, 1968)  
*Arthonia polymorpha* Acharius (Brodo, 1968)  
*Arthonia punctiformis* Acharius  
*Arthonia radiata* (Persoon) Acharius  
*Arthonia sexlocularis* Zahlbrückner (Brodo, 1968)  
*Arthonia siderea* Degelius (Brodo, 1968)  
*Arthonia spadicea* Leighton  
*Arthothelium spectabile* A. Massalongo  
*Arthothelium taediosum* auct. Amer. (Brodo, 1968)  
*Arthrorhaphis citrinella* (Acharius) Poelt  
*Arthrosporum populorum* A. Massalongo  
*Aspicilia caesiocinerea* (Malbranche) Arnold  
*Aspicilia cinerea* (L.) Körber  
*Aspicilia laevata* (Acharius) Arnold  
*Aspicilia verrucigera* Hue  
*Bacidia arceutina* (Acharius) Arnold (Ekman, 1996)  
*Bacidia bagliettoana* (A. Massalongo & De Not.) Jatta  
*Bacidia circumspecta* (Vainio) Malme

*Bacidia granosa* (Tuckerman) Zahlbruckner  
*Bacidia laurocerasi* (Duby) Zahlbruckner  
*Bacidia polychroa* (Th. Fries) Körber  
*Bacidia rubella* (Hoffmann) A. Massalongo  
*Bacidia schweinitzii* (Michener) A. Schneider  
*Bacidia suffusa* (Fries) A. Schneider  
*Bacidina chloroticula* (Nylander) Poelt & Vězda?  
*Bacidina delicata* (Leighton) V. Wirth & Vězda  
*Bacidina egenula* (Nylander) Vězda  
*Bacidina inundata* (Fries) Vězda  
*Baeomyces rufus* (Hudson) Rebent.  
*Bellemerea cinereorufescens* (Acharius) Clauzade & Roux  
*Biatora longispora* (Degelius) Lendemer & Printzen  
*Biatora pontica* Printzen & Tønsberg  
*Biatora printzenii* Tønsberg  
*Biatora toensbergii* Printzen s. lat.  
*Biatora vernalis* (L.) Fries  
*Botryolepraria lesdainii* (Hue) Canals et al.  
*Bryoria furcellata* (Fries) Brodo & D. Hawksworth  
*Bryoria fuscescens* (Gyelnik) Brodo & D. Hawksworth  
*Bryoria implexa* (Hoffmann) Brodo & D. Hawksworth (BUF)  
*Bryoria nadvornikiana* (Gyelnik) Brodo & D. Hawksworth  
*Bryoria subcana* (Stizenberger) Brodo & D. Hawksworth (Schmull et al., 2002)  
*Bryoria trichodes* (Michaux) Brodo & D. Hawksworth ssp. *trichodes*  
*Buellia alboatra* (Hoffmann) Th. Fries  
*Buellia curtisii* (Tuckerman) Imshaug  
*Buellia dialyta* (Nylander) Tuckerman  
*Buellia griseovirens* (Sm.) Almborn  
*Buellia "parasema v. polyspora* Imshaug ined."  
*Buellia schaeereri* De Not.  
*Buellia spuria* (Schaerer) Anzi  
*Buellia stillingiana* J. Steiner  
*Buellia turgescens* Tuckerman (BUF)  
*Buellia venusta* (Körber) Lettau  
*Buellia vernicoma* (Tuckerman) Tuckerman  
*Calicium glaucellum* Acharius  
*Calicium parvum* Tibell  
*Calicium quercinum* Persoon  
*Calicium salicinum* Persoon (NYS)  
*Calicium trabinellum* (Acharius) Acharius  
*Caloplaca camptidia* (Tuckerman) Zahlbruckner (Wetmore, 1994)  
*Caloplaca cerina* (Hedwig) Th. Fries  
*Caloplaca cirrochroa* (Acharius) Th. Fries (Wetmore & Kärnefelt, 1998)  
*Caloplaca citrina* (Hoffmann) Th. Fries  
*Caloplaca discolor* (Willey) Fink  
*Caloplaca feracissima* H. Magnusson  
*Caloplaca flavorubescens* (Hudson) J. R. Laundon  
*Caloplaca flavovirescens* (Wulfen) Dalla Torre & Sarnth.  
*Caloplaca holocarpa* (Hoffmann) Wade  
*Caloplaca lobulata* (Flörke) de Lesdain  
*Caloplaca obscurella* (Körber) Th. Fries (Wetmore, 1994)  
*Caloplaca oxfordensis* J. Hedrick  
*Caloplaca pollinii* (A. Massalongo) Jatta  
*Caloplaca saxicola* (Hoffmann) Nordin  
*Caloplaca sideritis* (Tuckerman) Zahlbruckner  
*Caloplaca stillicidiorum* (Vahl) Lyngé (BUF)  
*Caloplaca subsoluta* (Nylander) Zahlbruckner  
*Caloplaca* sp. (*C. scotoplaca* sensu R. C. Harris, Wetmore, 1996)  
*Candelaria concolor* (Dickson) Stein

*Candelaria fibrosa* (Fries) Müll. Arg.  
*Candelariella aurella* Hoffmann Zahlbruckner  
*Candelariella efflorescens* R. C. Harris & W.R. Buck  
*Candelariella vitellina* Hoffmann Müll. Arg.  
*Candelariella xanthostigma* (Acharius) Lettau  
*Catillaria lenticularis* (Acharius) Th. Fries  
*Catillaria modesta* (Müll. Arg.) Coppins? (BUF)  
*Catillaria nigroclavata* (Nylander) Schuler? (Brodo, 1968 as *C. glauconigrans*)  
*Cetraria arenaria* Kärnefelt  
*Cetraria ericetorum* Opiz ssp. *reticulata* (Räsänen) Kärnefelt  
*Cetraria laevigata* Rassadina  
*Cetraria muricata* (Acharius) Eckfeldt  
*Cetrariella delisei* (Schaerer) Kärnefelt & Thell  
*Cetrelia cetrariooides* (Duby) Culberson & C. Culberson  
*Cetrelia chicitae* (Culberson) Culberson & C. Culberson  
*Cetrelia olivetorum* (Nylander) Culberson & C. Culberson  
*Chaenotheca brunneola* (Acharius) Müll. Arg.  
*Chaenotheca chryscephala* (Acharius) Th. Fries  
*Chaenotheca ferruginea* (Turner & Borrer) Migula  
*Chaenotheca furfuracea* (L.) Tibell  
*Chaenotheca hygrophila* Tibell  
*Chaenotheca laevigata* Nádvorník  
*Chaenotheca stemonea* (Acharius) Müll. Arg.  
*Chaenotheca trichialis* (Acharius) Th. Fries  
*Chaenotheca xylooxena* Nádvorník  
*Chaenothecopsis brevipes* Tibell (Selva, 1998)  
*Chaenothecopsis debilis* (Sm.) Tibell  
*Chaenothecopsis ochroleuca* (Körber) Tibell & Ryman  
*Chaenothecopsis pusilla* (Acharius) A. Schmidt  
*Chaenothecopsis pusiola* (Acharius) Vainio  
*Chaenothecopsis rubescens* Vainio (Selva, 1998)  
*Chaenothecopsis savonica* (Räsänen) Tibell  
*Chaenothecopsis viridireagens* (Nádvorník) A. Schmidt  
*Chrysothrix candelaris* (L.) J. R. Laundon  
*Cladonia acuminata* (Acharius) Norrlin  
*Cladonia acuminata* var. *norrlinii* (Vainio) Lyngé  
*Cladonia amaurocraea* (Flörke) Schaerer  
*Cladonia apodocarpa* Robbins  
*Cladonia arbuscula* (Wallroth) Flotow  
*Cladonia atlantica* A. Evans  
*Cladonia beaumontii* (Tuckerman) Vainio  
*Cladonia borealis* Stenroos  
*Cladonia boryi* Tuckerman  
*Cladonia botrytes* (Hagen) Willdenow  
*Cladonia brevis* Sandstede  
*Cladonia caespiticia* (Persoon) Flörke  
*Cladonia cariosa* (Acharius) Sprengel  
*Cladonia carneola* (Fries) Fries  
*Cladonia caroliniana* Tuckerman  
*Cladonia cenotea* (Acharius) Schaerer  
*Cladonia chlorophaea* (Sommerfelt) Sprengel  
*Cladonia coniocraea* (Flörke) Sprengel  
*Cladonia conista* A. Evans  
*Cladonia cornuta* (L.) Hoffmann  
*Cladonia crispata* (Acharius) Flotow  
*Cladonia cristatella* Tuckerman  
*Cladonia cryptochlorophaea* Asahina  
*Cladonia cyanipes* (Sommerfelt) Nylander  
*Cladonia cylindrica* (A. Evans) A. Evans

*Cladonia dahliana* Kristinsson  
*Cladonia decorticata* (Flörke) Sprengel  
*Cladonia deformis* (L.) Hoffmann  
*Cladonia didyma* (Fee) Vainio (Brodo, 1968)  
*Cladonia digitata* (L.) Hoffmann  
*Cladonia dimorphoclada* Robbins (incl. *Cladonia psoromica* Dey)  
*Cladonia evansii* Abbayes (Brodo, 1968)  
*Cladonia farinacea* (Vainio) A. Evans  
*Cladonia fimbriata* (L.) Fries  
*Cladonia floerkeana* (Fries) Flörke  
*Cladonia floridana* Sandstede  
*Cladonia furcata* (Hudson) Schrader  
*Cladonia glauca* Flörke  
*Cladonia gracilis* (L.) Willdenow ssp. *gracilis*  
*Cladonia gracilis* ssp. *elongata* (Wulfen) Vainio  
*Cladonia gracilis* ssp. *turbinata* (Acharius) Ahti  
*Cladonia grayi* Sandstede  
*Cladonia incrassata* Flörke  
*Cladonia macilenta* Hoffmann (incl. *Cladonia bacillaris* Genth)  
*Cladonia macrophylla* (Schaerer) Stenhammar  
*Cladonia mateocyatha* Robbins  
*Cladonia maxima* (Asahina) Ahti  
*Cladonia merochlorophaea* Asahina  
*Cladonia metacorallifera* Asahina  
*Cladonia mitis* Sandstede  
*Cladonia multiformis* G. Merrill  
*Cladonia ochrochlora* Flörke  
*Cladonia parasitica* (Hoffmann) Hoffmann  
*Cladonia petrophila* R. C. Harris  
*Cladonia peziziformis* (Withering) J. R. Laundon  
*Cladonia phyllophora* Hoffmann  
*Cladonia piedmontensis* G. Merrill  
*Cladonia pleurota* (Flörke) Schaerer  
*Cladonia pocillum* (Acharius) Grognot  
*Cladonia polycarpoidea* Nylander  
*Cladonia pyxidata* (L.) Hoffmann  
*Cladonia ramulosa* (Withering) J. R. Laundon  
*Cladonia rangiferina* (L.) F.H. Wiggers  
*Cladonia rappii* A. Evans var. *exilior* (Abbayes) Ahti  
*Cladonia rei* Schaerer  
*Cladonia robbinsii* A. Evans  
*Cladonia santensis* Tuckerman (Brodo, 1968)  
*Cladonia scabriuscula* (Delise) Leighton  
*Cladonia simulata* Robbins (Brodo, 1968)  
*Cladonia sobolescens* Vainio  
*Cladonia squamosa* Hoffmann  
*Cladonia stellaris* (Opiz) Pouzar & Vězda  
*Cladonia strepsilis* (Acharius) Grognot  
*Cladonia stygia* (Fries) Ruoss  
*Cladonia submittis* A. Evans  
*Cladonia subtenuis* (Abbayes) Mattick  
*Cladonia subulata* (L.) F.H. Wiggers  
*Cladonia sulphurina* (Michaux) Fries  
*Cladonia terraenovae* Ahti (Brodo, 1968)  
*Cladonia turgida* Hoffmann  
*Cladonia uncialis* (L.) F.H. Wigg.  
*Cladonia verticillata* (Hoffmann) Schaerer  
*Cladonia wainioi* Savicz  
*Clauzadea monticola* (Schaerer) Hafellner & Bellemere

*Claudzadeana macula* (Taylor) Coppins & Rambold  
*Coccocarpia palmicola* (Sprengel) Arvidsson & D.J. Galloway  
*Coenogonium luteum* (Dickson) Kalb & Lücking  
*Coenogonium pineti* (Acharius) ined.  
*Collema bachmanianum* (Fink) Degelius  
*Collema coccophorum* Tuckerman  
*Collema conglomeratum* Hoffmann  
*Collema flaccidum* (Acharius) Acharius  
*Collema fragrans* (Sm.) Acharius (BUF)  
*Collema furfuraceum* (Arnold) Du Rietz  
*Collema nigrescens* (Hudson) DC.  
*Collema pulcellum* Acharius  
*Collema ryssoleum* (Tuckerman) A. Schneider  
*Collema subflaccidum* Degelius  
*Collema tenax* (Swartz) Acharius  
*Collema undulatum* Flotow var. *granulosum* Degelius  
*Conotrema urceolatum* (Acharius) Tuckerman  
*Cresponea chloroconia* (Tuckerman) Egea & Torrente  
*Cyphelium lucidum* (Th. Fries) Th. Fries (Selva, 1998)  
*Cyphelium tigillare* (Acharius) Acharius  
*Cystocoleus ebeneus* (Dillwyn) Thwaites  
*Dermatocarpon americanum* Vainio  
*Dermatocarpon intestiniforme* (Körber) Hasse  
*Dermatocarpon luridum* (Withering) J. R. Laundon  
*Dibaeis baeomyces* (L. f.) Rambold & Hertel  
*Dictyocatenulata alba* Finley & E. F. Morris  
*Dimelaena oreina* (Acharius) Norman  
*Diploschistes muscorum* (Scopoli) R. Santesson  
*Diploschistes scruposus* (Schreber) Norman  
*Dirinaria frostii* (Tuckerman) Hale & Culberson  
*Endocarpon pusillum* Hedwig  
*Eopyrenula intermedia* Aptroot  
*Ephebe lanata* (L.) Vainio  
*Evernia mesomorpha* Nyl  
*Evernia prunastri* (L.) Acharius  
*Flavocetraria cucullata* (Bellardi) Kärnefelt & Thell  
*Flavocetraria nivalis* (L.) Kärnefelt & Thell  
*Flavoparmelia baltimorensis* (Gyelnik & Fóriss) Hale  
*Flavoparmelia caperata* (L.) Hale  
*Flavopunctelia flaventior* (Stirton) Hale  
*Fuscidea arboricola* Tønsberg  
*Fuscidea kochiana* (Hepp) V. Wirth & Vězda (Lowe, 1939)  
\**Fuscidea lowensis* (H. Magnusson) R. Anderson & Hertel  
*Fuscidea praeruptorum* (Du Rietz & H. Magnusson) V. Wirth & Vezda (Lowe, 1939 as Lecidea)  
*Fuscidea pusilla* Tønsberg  
*Fuscidea recensa* (Stirton) Hertel, V. Wirth & Vězda  
\**Fuscidea subreagens* (H. Magnusson) Oberholzer & V. Wirth  
*Fuscopannaria leucophaea* (Vahl) P. M. Jørgensen  
*Fuscopannaria leucosticta* (Tuckerman) P. M. Jørgensen  
*Graphis scripta* (L.) Acharius  
*Gyalecta jenensis* (Batsch) Zahlbruckner  
*Gyalideopsis* sp.  
*Hafellia arnoldii* (Servít) Hafellner & Türk  
*Hafellia disciformis* (Fries) Marbach & H. Mayrhofer  
*Halecania* sp.  
*Heppia adglutinata* (Kempelhuber) A. Massalongo  
*Hertelidea botryosa* (Fries) Printzen & Kantvilas  
*Heterodermia echinata* (Taylor) Culberson (FH)  
*Heterodermia galactophylla* (Tuckerman) Culberson

*Heterodermia hypoleuca* (Muhlenberg) Trevisan  
*Heterodermia leucomelos* (L.) Poelt  
*Heterodermia obscurata* (Nylander) Trevisan  
*Heterodermia speciosa* (Wulfen) Trevisan  
*Heterodermia squamulosa* (Degelius) Culberson  
*Hydrothyria venosa* J. L. Russell  
*Hyperphyscia adglutinata* Flörke Mayrhofer & Poelt  
*Hyperphyscia syncolla* (Nylander) Kalb  
*Hypocenomyce anthracophila* (Nylander) P. James & Gotth. Schneider  
*Hypocenomyce friesii* (Acharius) P. James & Gotth. Schneider  
*Hypocenomyce scalaris* (Acharius) M. Choisy  
*Hypogymnia appalachensis* Pike ined.  
*Hypogymnia krogiae* Ohlsson  
*Hypogymnia physodes* (L.) Nylander  
*Hypogymnia tubulosa* (Schaerer) Havaas  
*Hypogymnia vittata* (Acharius) Parrique  
*Hypotrachyna livida* (Taylor) Hale  
*Hypotrachyna rockii* (Zahlbruckner) Hale (FH)  
*Icmadophila ericetorum* (L.) Zahlbruckner  
*Imshaugia aleurites* (Acharius) Meyer  
*Imshaugia placorodia* (Acharius) Meyer  
*Ionaspis alba* Lutzoni  
*Ionaspis lacustris* (Withering) J. R. Laundon  
*Japewia tornoensis* (Nylander) Tønsberg (Lowe, 1939 as *Lecidea*)  
*Lasallia papulosa* (Acharius) Llano  
*Lasallia pensylvanica* Hoffmann Llano  
*Lecania cuprea* (A. Massalongo) v. d. Boom & Coppins  
*Lecania cyrtella* (Acharius) Th. Fries  
*Lecania naegelii* (Hepp) Diederich & v. d. Boom  
*Lecania perproxima* (Nylander) Zahlbruckner  
*Lecanora albella* (Persoon) Acharius (Imshaug & Brodo, 1966)  
*Lecanora albella* var. *rubescens* (Imsh. & Brodo) Lumbsch  
*Lecanora albescens* (Hoffmann) Flörke  
*Lecanora allophana* (Acharius) Nylander  
*Lecanora argentea* Oksner & Volkova  
*Lecanora argentata* (Acharius) Malme (BUF)  
*Lecanora cadubriae* (A. Massalongo) Hedlund (Lowe, 1939 as *Lecidea*)  
*Lecanora caesiorubella* Acharius ssp. *caesiorubella*  
*Lecanora chlarotera* Nylander  
*Lecanora cinereofusca* H. Magnusson  
*Lecanora cinereofusca* var. *appalachensis* Brodo  
*Lecanora circumborealis* Brodo & Vitikainen  
*Lecanora cupressi* Tuckerman (Brodo, 1968)  
*Lecanora dispersa* (Persoon) Sommerfelt  
*Lecanora flotowiana* Sprengel  
*Lecanora fuscescens* (Sommerfelt) Nylander (Lowe, 1939 as *Lecidea*)  
*Lecanora glabrata* (Acharius) Malme  
*Lecanora hagenii* (Acharius) Acharius  
*Lecanora hybocarpa* (Tuckerman) Brodo  
*Lecanora hypopta* (Acharius) Vainio (Lowe, 1939 as *Lecidea*)  
*Lecanora impudens* Degelius  
*Lecanora imshaugii* Brodo  
*Lecanora intricata* (Acharius) Acharius  
*Lecanora invadens* H. Magnusson  
*Lecanora louisianae* de Lesdain (Brodo, 1984)  
*Lecanora minutella* Nylander  
*Lecanora muralis* (Schreber) Rabenhorst  
*Lecanora perplexa* Brodo  
\**Lecanora placidensis* (H. Magnusson) Knoph, Leuckert & Rambold

*Lecanora polytropa* (Hoffmann) Rabenhorst  
*Lecanora pseudistera* Nylander  
*Lecanora pulicaris* (Persoon) Acharius  
*Lecanora rugosella* Zahlbruckner  
*Lecanora sambuci* (Persoon) Nylander  
*Lecanora strobilina* (Sprengel) Kieffer  
*Lecanora subimmersa* Vainio  
*Lecanora subpallens* Zahlbruckner  
*Lecanora subrugosa* Nylander  
*Lecanora symmicta* auct.  
*Lecanora thysanophora* R. C. Harris  
*Lecanora umbrosa* Degelius?  
*Lecanora valesiaca* (Müll. Arg.) Stizenberger  
*Lecanora wisconsinensis* H. Magnusson  
*Lecanora xylophila* Hue  
*Lecidea ahlesii* (Körber) Nylander  
*Lecidea albofuscans* Nylander  
\**Lecidea amniculensis* Lowe (Lowe, 1939)  
*Lecidea atomaria* Th. Fries (FH)  
*Lecidea auriculata* Th. Fries  
*Lecidea berengeriana* (A. Massalongo) Nylander  
\**Lecidea brunneofusca* H. Magnusson  
*Lecidea carnulenta* (Tuckerman) Fink (Lowe, 1939)  
\**Lecidea cellularis* Lowe (FH)  
\**Lecidea columnata* Lowe (Lowe, 1939)  
*Lecidea cyrtidia* Tuckerman  
*Lecidea delincta* Nylander  
*Lecidea diapensiae* Th. Fries (FH)  
*Lecidea erythrophaea* Flörke  
\**Lecidea furva* Lowe (Lowe, 1939)  
\**Lecidea humilis* Lowe  
*Lecidea hypnorum* Libert  
*Lecidea lapicida* (Acharius) Acharius  
*Lecidea lithophila* (Acharius) Acharius (Lowe, 1939)  
*Lecidea Iynceola* Th. Fries (Lowe, 1939)  
*Lecidea Iyngei* Degelius  
*Lecidea marciensis* Lowe  
*Lecidea myriocarpoides* Nylander  
\**Lecidea nemoralis* Lowe (FH)  
*Lecidea nylanderi* (Anzi) Th. Fries  
*Lecidea olivascens* Th. Fries  
*Lecidea plana* (Lahm) Nylander  
*Lecidea plebeja* Nylander  
\**Lecidea pulla* Lowe (Lowe, 1939)  
*Lecidea pycnocarpa* (Körber) Ohlert  
\**Lecidea rugosa* Lowe (Lowe, 1939)  
*Lecidea sphacelata* Th. Fries  
\**Lecidea subramosa* Lowe  
*Lecidea tessellata* Flörke  
*Lecidea turgidula* Fries  
*Lecidea virginiensis* Calkins & Nylander  
*Lecidella achristotera* (Nylander) Hertel & Leuckert (FH)  
*Lecidella elaeochroma* (Acharius) M. Choisy  
*Lecidella stigmatica* (Acharius) Hertel & Leuckert  
*Lecidoma demissum* (Rutstr.) G. Schneid. & Hertel  
*Lempholemma cladodes* (Tuckerman) Zahlbruckner (BUF, NYS)  
*Lempholemma polyanthes* (Bernh.) A. Massalongo  
*Lepraria cacuminum* (A. Massalongo) Lohtander?  
*Lepraria caesiocalba* (de Lesdain) J. R. Laundon

*Lepraria elobata* Tønsberg  
*Lepraria incana* (L.) Acharius  
*Lepraria lobificans* Nylander  
*Lepraria membranacea* (Dickson)  
*Lepraria neglecta* (Nylander) Erichsen  
*Lepraria neglecta* s. lat. (psoromic acid)  
*Lepraria rigidula* (de Lesdain) Tønsberg  
*Lepraria vouauxii* (Hue) R. C. Harris  
*Lepraria* sp. (atranorin, zeorin)  
*Lepraria* sp. (fumarprotocetraric or protocetraric acid)  
*Leptogium azureum* (Swartz) Montagne  
*Leptogium chloromelum* (Swartz) Nylander (BUF)  
*Leptogium corticola* (Taylor) Tuckerman  
*Leptogium cyanescens* (Rabenhorst) Körber  
*Leptogium dactylinum* Tuckerman  
*Leptogium hirsutum* Sierk  
*Leptogium juniperinum* Tuckerman  
*Leptogium lacerooides* de Lesdain (Sierk, 1964)  
*Leptogium lichenoides* (L.) Zahlbruckner  
*Leptogium millegranum* Sierk (BUF)  
*Leptogium saturninum* (Dickson) Nylander  
*Leptogium subtile* (Schrader) Torss.  
*Leptogium tenuissimum* (Dickson) Körber  
*Leptogium teretiusculum* (Wallroth) Arnold  
*Lichenomphalia hudsoniana* (H. S. Jenn.) Redhead, Lutzoni, Moncalvo, & Vilgalys  
*Lichinella nigritella* (Lettau) Moreno & Egea  
*Lithothelium hyalosporum* (Nylander) Aptroot  
*Lithothelium septemseptatum* (R. C. Harris) Aptroot  
*Lobaria pulmonaria* (L.) Hoffmann  
*Lobaria quercizans* Michaux  
*Lopadium disciforme* (Flotow) Kullhem  
*Loxospora cismanica* (Beltr.) Hafellner  
*Loxospora elatina* (Acharius) A. Massalongo  
*Loxospora ochrophyphaea* (Tuckerman) R. C. Harris  
*Loxospora pustulata* (Brodo & Culberson) R. C. Harris  
*Maronea polyphaea* H. Magnusson  
*Megalaria laureri* (Th. Fries) Hafellner  
*Megalospora porphyritis* (Tuckerman) R. C. Harris  
*Megaspore verrucosa* (Acharius) Hafellner & V. Wirth  
*Melanelia culbersonii* (Hale) Thell  
*Melanelia disjuncta* (Erichsen) Esslinger  
*Melanelia exasperata* (De Notaris) Esslinger  
*Melanelia fuliginosa* (Duby) Esslinger  
*Melanelia halei* (Ahti) Esslinger  
*Melanelia hepatizon* (Acharius) Thell  
*Melanelia infumata* (Nylander) Esslinger  
*Melanelia olivacea* (L.) Esslinger  
*Melanelia panniformis* (Nylander) Esslinger  
*Melanelia septentrionalis* (Lynge) Esslinger  
*Melanelia sorediata* (Acharius) Goward & Ahti  
*Melanelia stygia* (L.) Esslinger  
*Melanelia subaurifera* (Nylander) Esslinger  
*Menegazzia terebrata* (Hoffmann) A. Massalongo  
*Micarea chlorosticta* (Tuckerman) R. C. Harris  
*Micarea crassipes* (Th. Fries) Coppins  
*Micarea endocyanea* (Tuckerman) R. C. Harris  
*Micarea erratica* (Körber) Hertel, Rambold & Pietschmann  
*Micarea leprosula* (Th. Fries) Coppins & A. Fletcher  
*Micarea lignaria* (Acharius) Hedlund

*Micarea lithinella* (Nylander) Hedlund  
*Micarea melaena* (Nylander) Hedlund  
*Micarea misella* (Nylander) Hedlund  
*Micarea neostiptata* Coppins & P. May  
*Micarea peliocarpa* (Anzi) Coppins & R. Santesson  
*Micarea prasina* Fries  
*Micarea rhabdogena* (Norman) Hedlund (FH)  
*Micarea sylvicola* (Flotow) Vězda & V. Wirth  
*Micarea ternaria* (Nylander) Vězda  
*Microcalicium ahlneri* Tibell  
*Microcalicium disseminatum* (Acharius) Vainio  
*Miriquidica* sp.  
*Mycobilimbia carneoalbida* (Müll. Arg.) Printzen  
*Mycobilimbia epixanthoides* (Nylander) Vitikainen, Ahti, Kuusinen, Lommi & T. Ulvinen  
*Mycoblastus affinis* (Schaerer) Schauer  
*Mycoblastus fucatus* (Stirton) Zahlbruckner  
*Mycoblastus sanguinarius* (L.) Norman  
*Mycocalicium subtile* (Persoon) Szatala  
*Mycoporum compositum* (A. Massalongo) R. C. Harris  
*Mycoporum pycnocarpoides* Müll. Arg.  
*Myelochroa aurulenta* (Tuckerman) Elix & Hale  
*Myelochroa galbina* (Acharius) Elix & Hale  
*Myriospora immersa* (J. Hedrick) R. C. Harris *comb. nov*<sup>1</sup>  
*Myxobilimbia sabuletorum* (Schreber) Hafellner  
*Nadvornikia sorediata* R. C. Harris  
*Nephroma arcticum* (L.) Torss.  
*Nephroma bellum* (Sprengel) Tuckerman  
*Nephroma helveticum* Acharius  
*Nephroma parile* (Acharius) Acharius  
*Ochrolechia africana* Vainio (Brodo, 1968 as *Ochrolechia* sp.)  
*Ochrolechia androgyna* (Hoffmann) Arnold  
*Ochrolechia arborea* (Kreyer) Almborn  
*Ochrolechia mexicana* Vainio (Brodo, 1991)  
*Ochrolechia pseudopallescens* Brodo  
*Ochrolechia tartarea* (L.) A. Massalongo  
*Ochrolechia trochophora* (Vainio) Oshio  
*Ochrolechia trochophora* var. *pruinifronsella* Brodo  
*Ochrolechia yasudae* Vainio  
*Opegrapha atra* Persoon  
*Opegrapha rufescens* Persoon (Brodo, 1968)  
*Opegrapha varia* Persoon  
*Opegrapha vulgata* Acharius  
*Ophioparma ventosa* (L.) Norman (BUF)  
*Orphniospora moriopsis* (A. Massalongo) D. Hawksworth  
*Pannaria lurida* (Mont.) Nylander ssp. *russellii* (Tuckerman) P. M. Jørgensen (BUF)  
*Pannaria subfusca* P. M. Jørgensen  
*Parmelia omphalodes* (L.) Acharius  
*Parmelia neodiscordans* Hale  
*Parmelia saxatilis* (L.) Acharius  
*Parmelia squarrosa* Hale  
*Parmelia sulcata* Taylor  
*Parmeliopsis ambigua* (Wulfen) Nylander  
*Parmeliopsis capitata* R.C. Harris *ex* J. Hinds & P. Hinds  
*Parmeliopsis hyperopta* (Acharius) Arnold  
*Parmeliopsis subambigua* Gyelnik  
*Parmotrema arnoldii* (Du Rietz) Hale (CUP)  
*Parmotrema chinense* (Osbeck) Hale & Ahti  
*Parmotrema crinitum* (Acharius) M. Choisy  
*Parmotrema hypoleucinum* (Stein) Hale

*Parmotrema hypotropum* (Nylander) Hale  
*Parmotrema margaritatum* (Hue) Hale  
*Parmotrema perforatum* (Jacquin) A. Massalongo  
*Parmotrema stuppeum* (Taylor) Hale  
*Parmotrema submarginale* (Michaux) DePriest & B. Hale (FH)  
*Peltigera aphthosa* (L.) Willdenow  
*Peltigera canina* (L.) Willdenow  
*Peltigera degener* Gyelnik  
*Peltigera didactyla* (Withering) J. R. Laundon  
*Peltigera elisabethae* Gyelnik  
*Peltigera evansiana* Gyelnik  
*Peltigera extenuata* (Vainio) Lojka  
*Peltigera horizontalis* (Hudson) Baumgartner  
*Peltigera hymenina* (Acharius) Delise  
*Peltigera lepidophora* (Vainio) Bitter  
*Peltigera leucophlebia* (Nylander) Gyelnik  
*Peltigera membranacea* (Acharius) Nylander  
*Peltigera neckeri* Müll. Arg.  
*Peltigera neopolydactyla* (Gyelnik) Gyelnik  
*Peltigera polydactylon* (Necker) Hoffmann  
*Peltigera praetextata* (Sommerfelt) Zopf  
*Peltigera rufescens* (Weiss) Humboldt  
*Pertusaria alpina* Ahles  
*Pertusaria amara* (Acharius) Nylander  
*Pertusaria consocians* Dibben  
*Pertusaria dactylina* (Acharius) Nylander (Dibben, 1980)  
*Pertusaria globularis* (Acharius) Tuckerman  
*Pertusaria hypothamnolica* Dibben (Dibben, 1980)  
*Pertusaria leucostoma* (Bernhardi) A. Massalongo  
*Pertusaria macounii* (Lamb) Dibben  
*Pertusaria multipunctoides* Dibben  
*Pertusaria ophthalmiza* (Nylander) Nylander  
*Pertusaria paratuberculifera* Dibben  
*Pertusaria plittiana* Erichsen  
*Pertusaria propinqua* Müll. Arg. (Dibben, 1980)  
*Pertusaria pustulata* (Acharius) Duby  
*Pertusaria rubefacta* Erichsen  
\**Pertusaria subpertusa* Brodo  
*Pertusaria trachythallina* Erichsen  
*Pertusaria velata* (Turner) Nylander  
*Pertusaria waghornei* Hulting (Dibben, 1980)  
*Pertusaria xanthodes* Müll. Arg. (Dibben, 1980)  
*Phaeocalicium curtisii* (Tuckerman) Tibell  
*Phaeocalicium polyporaeum* (Nylander) Tibell  
*Phaeographis inusta* (Acharius) Müll. Arg.  
*Phaeophyscia adiastola* (Esslinger) Esslinger  
*Phaeophyscia cernohorskyi* (Nádvorník) Esslinger  
*Phaeophyscia ciliata* (Hoffmann) Moberg  
*Phaeophyscia endococcinodes* (Poelt) Esslinger  
*Phaeophyscia hirtella* Esslinger  
*Phaeophyscia hispidula* (Acharius) Moberg  
*Phaeophyscia insignis* (Mereschkowsky) Moberg  
*Phaeophyscia pusilloides* (Zahlbrückner) Esslinger  
*Phaeophyscia rubropulchra* (Degelius) Moberg  
*Phaeophyscia sciastra* (Acharius) Moberg  
*Phaeophyscia squarrosa* Kashiwadani  
*Phlyctis argena* (Sprengel) Flotow  
*Phlyctis* sp. (saxicolous)  
*Physcia adscendens* (Fries) H. Olivier

*Physcia aipolia* (Humboldt) Fürnrohr  
*Physcia americana* G. Merrill  
*Physcia caesia* (Hoffmann) Fürnrohr  
*Physcia dubia* (Hoffmann) Lettau  
*Physcia millegrana* Degelius  
*Physcia phaea* (Tuckerman) J. W. Thomson  
*Physcia stellaris* (L.) Nylander  
*Physcia subtilis* Degelius  
*Physciella chloantha* (Acharius) Esslinger  
*Physciella melanchra* (Hue) Esslinger  
*Physconia detersa* (Nylander) Poelt  
*Physconia leucoleiptes* (Tuckerman) Esslinger  
*Pilophorus cereolus* (Acharius) Th. Fries  
*Pilophorus fibula* (Tuckerman) Th. Fries  
*Placidiopsis minor* R. C. Harris  
*Placidium squamulosum* (Acharius) Breuss  
*Placidium tuckermanii* (Montagne) Breuss  
*Placynthiella icmalea* (Acharius) Coppins & P. James  
*Placynthiella oligotropha* (J. R. Laundon) Coppins & P. James  
*Placynthiella uliginosa* (Schrader) Coppins & P. James  
*Placynthium flabellosum* (Tuckerman) Zahlbruckner  
*Placynthium nigrum* (Hudson) Gray  
*Placynthium petersii* (Nylander) Burnham  
*Placynthium stenophyllum* (Tuckerman) Fink  
*Platismatia glauca* (L.) Culberson & C. Culberson  
*Platismatia tuckermanii* (Oakes) Culberson & C. Culberson  
*Polysporina lapponica* (Schaerer) Degelius  
*Polysporina simplex* (Davies) Vězda  
*Porpidia albocaerulescens* (Wulfen) Hertel & Knoph  
*Porpidia albocaerulescens* var. *polycarpiza* (Vainio) Hertel  
*Porpidia cinereoatra* (Acharius) Hertel & Knoph  
*Porpidia crustulata* (Acharius) Hertel & Knoph  
\**Porpidia diversa* (Lowe) Gowan  
*Porpidia herteliana* Gowan  
*Porpidia macrocarpa* (DC.) Hertel & A. J. Schwab  
*Porpidia tahawasiana* Gowan  
*Porpidia tuberculosa* (Sm.) Hertel & Knoph  
*Protoblastenia rupestris* (Scopoli) Steiner  
*Protomicarea limosa* (Acharius) Hafellner  
*Protopannaria pezizoides* (Weber) P. M. Jørgensen & S. Ekman  
*Protoparmelia badia* (Hoffmann) Hafellner  
*Pseudevernia cladonia* (Tuckerman) Hale & Culberson  
*Pseudevernia consocians* (Vainio) Hale & Culberson  
*Psilolechia clavulifera* (Nylander) Coppins  
*Psilolechia lucida* (Acharius) M. Choisy  
*Psora decipiens* (Hedwig) Hoffmann  
*Psora pseudorussellii* Timdal  
*Psorotrichia schaeereri* (A. Massalongo) Arnold  
*Psorula rufonigra* (Tuckerman) Gotth. Schneider  
*Punctelia appalachensis* (Culberson) Krog  
*Punctelia bolliana* (Müll. Arg.) Krog  
*Punctelia rudentecta* (Acharius) Krog  
*Punctelia subrudecta* auct. Amer.  
*Pycnothelia papillaria* Dufour  
*Pyrenocollema strontianense* (Swinscow) R. C. Harris  
*Pyrenopsis polycocca* (Nylander) Tuckerman (mapped by Brodo et al., 2001)  
*Pyrenula cruenta* (Montagne) Trevisan (Brodo, 1968)  
*Pyrenula laevigata* (Persoon) Arnold (BUF)  
\**Pyrenula lucifera* R. C. Harris

*Pyrenula macounii* R. C. Harris  
*Pyrenula pseudobufonia* (Rehm) R. C. Harris  
*Pyrenula subelliptica* (Tuckerman) R. C. Harris  
*Pyrrhospora elabens* (Fries) Hafellner  
*Pyrrhospora quernea* (Acharius) Körber  
*Pyrrhospora russula* (Acharius) Hafellner  
*Pyrrhospora varians* (Acharius) R. C. Harris  
*Pyxine sorediata* (Acharius) Montagne  
*Pyxine subcinerea* Stirton  
*Ramalina americana* Hale  
*Ramalina denticulata* Nylander  
*Ramalina intermedia* (Nylander) Nylander  
*Ramalina petrina* Bowler & Rundel  
*Ramalina pollinaria* (Westr.) Acharius  
*Ramalina stenospora* Müll. Arg. (Brodo, 1968)  
*Ramalina willeyi* Howe (Brodo, 1968)  
*Rhizocarpon badioatrum* (Sprengel) Th. Fries  
*Rhizocarpon cinereovirens* (Müll. Arg.) Vainio  
*Rhizocarpon disporum* (Hepp) Müll. Arg.  
*Rhizocarpon eupetraeum* (Nylander) Arnold  
*Rhizocarpon eupetraeoides* (Nylander) Blomberg & Forssell (FH)  
*Rhizocarpon geographicum* (L.) DC.  
*Rhizocarpon grande* (Flotow) Arnold  
*Rhizocarpon infernulum* (Nylander) Lynge f. *sylvaticum* Fryday  
*Rhizocarpon lavatum* (Fries) Hazsl.  
*Rhizocarpon lecanorinum* Anders (mapped by Brodo et al., 2001)  
*Rhizocarpon oederi* (Weber) Körber  
*Rhizocarpon rubescens* Th. Fries  
*Rhizocarpon subgeminatum* Eitner  
*Rhizocarpon submodestum* (Vainio) Vainio  
*Rhizocarpon timdalii* Ihlen & Fryday  
*Rhizoplaca chrysoleuca* (Sm.) Zopf  
*Rhizoplaca subdiscrepans* (Nylander) R. Santesson  
*Rimelia cetrata* (Acharius) Hale & Fletcher  
*Rimelia reticulata* (Taylor) Hale & Fletcher  
*Rimularia badioatra* (Kempelhuber) Hertel & Rambold  
\**Rimularia caeca* (Lowe) Rambold & Printzen  
*Rinodina adirondackii* H. Magnusson  
*Rinodina ascociscana* (Tuckerman) Tuckerman  
*Rinodina bischoffii* (Hepp) A. Massalongo  
*Rinodina cana* (Arnold) Arnold  
*Rinodina gennarii* Bagl. (Brodo, 1968 as *R. salina*)  
*Rinodina maculans* Müll. Arg.  
*Rinodina oxydata* (A. Massalongo) A. Massalongo  
*Rinodina populicola* H. Magnusson  
*Rinodina subminuta* H. Magnusson  
*Rinodina tephraspis* (Tuckerman) Herre  
*Rinodina willeyi* Sheard & Giralt  
*Ropalospora chlorantha* (Tuckerman) S. Ekman  
*Ropalospora lugubris* (Sommerfelt) Poelt  
*Ropalospora viridis* (Tønsberg) Tønsberg  
*Santessonella crossophylla* (Tuckerman) P. M. Jørgensen (NYS)  
*Sarcogyne clavus* (DC.) Kempelhuber  
*Sarcogyne privigna* (Acharius) A. Massalongo *s. lat.*  
*Sarcogyne regularis* Körber  
*Sarcogyne similis* H. Magnusson  
*Sarcopyrenia cylindrospora* (Crouan & Crouan) Aguirre  
*Schaereria cinereorufa* (Schaerer) Th. Fries  
*Schaereria fuscocinerea* (Nylander) Clauzade & Roux

*Sclerophora nivea* (Hoffmann) Tibell  
*Scoliciosporum chlorococcum* (Stenhammar) Vězda  
*Scoliciosporum umbrinum* (Acharius) Arnold  
*Segestria lectissima* Fries  
*Solorina saccata* (L.) Acharius  
*Sphinctrina anglica* Nylander  
*Sphinctrina turbinata* (Persoon) De Not.  
*Staurothele diffractella* (Nylander) Tuck  
*Staurothele drummondii* (Tuckerman) Tuckerman  
*Staurothele fissa* (Taylor) Zwackh  
*Stenocybe major* Körber  
*Stenocybe pullatula* (Acharius) Stein  
*Stereocaulon condensatum* Hoffmann  
*Stereocaulon dactylophyllum* Flörke  
*Stereocaulon glaucescens* Tuckerman var. *caespitosulum* (Nylander) Lamb  
*Stereocaulon paschale* (L.) Hoffmann  
*Stereocaulon pileatum* Acharius  
*Stereocaulon saxatile* H. Magnusson  
*Stereocaulon subcoralloides* (Nylander) Nylander (FH)  
*Stereocaulon tennesseense* H. Magnusson var. *nigrofastigiatum* Lamb  
*Stereocaulon tomentosum* Fries  
*Sticta beauvoisii* Delise  
*Sticta fuliginosa* (Hoffmann) Acharius  
*Sticta sylvatica* (Hudson) Acharius (BUF)  
*Strigula americana* R. C. Harris (BUF)  
*Strigula jamesii* (Swinscow) R. C. Harris  
*Strigula stigmatella* (Acharius) R. C. Harris  
*Teloschistes chrysophthalmus* (L.) Th. Fries  
*Teloschistes flavicans* (Swartz) Norman (Brodo, 1968)  
*Tephromela atra* (Hudson) Hafellner  
*Thamnolia subuliformis* (Ehrhart) Culberson  
\**Thelenella humilis* R. C. Harris  
*Thelidium decipiens* (Nylander) Kempelhuber (BUF)  
*Thelidium zwackhii* (Hepp) A. Massalongo  
*Thelocarpon intermediellum* Nylander  
*Thrombium epigaeum* (Persoon) Wallroth  
*Thyrea confusa* Henssen  
*Trapelia coarctata* (Sm.) M. Choisy  
*Trapelia corticola* Coppins & P. James  
*Trapelia involuta* (Taylor) Hertel  
*Trapelia obtegens* (Th. Fries) Hertel (Lowe, 1939 as *Lecidea*)  
*Trapelia placodoides* Coppins & P. James  
*Trapeliopsis flexuosa* (Fries) Coppins & P. James  
*Trapeliopsis gelatinosa* (Flörke) Coppins & P. James  
*Trapeliopsis granulosa* (Hoffmann) Lumbsch  
*Trapeliopsis viridescens* (Schrader) Coppins & P. James  
*Tremolecia atrata* (Acharius) Hertel  
*Trichothelium aenea* (Wallroth) R. C. Harris  
*Trichothelium cestrense* (Michener) R. C. Harris  
*Trichothelium chloroticum* (Acharius) R. C. Harris  
*Trypethelium virens* Tuckerman ex Michener  
*Tuckermanella fendleri* (Nylander) Esslinger  
*Tuckermanopsis americana* (Sprengel) Hale  
*Tuckermanopsis ciliaris* (Acharius) Gyelnik  
*Tuckermanopsis orbata* (Nylander) M. J. Lai  
*Tuckermanopsis sepincola* (Ehrhart) Hale  
*Umbilicaria americana* Poelt & Nash  
*Umbilicaria deusta* (L.) Baumgartner  
*Umbilicaria hirsuta* (Westr.) Hoffmann

*Umbilicaria hyperborea* (Acharius) Hoffmann  
*Umbilicaria mammulata* (Acharius) Tuckerman  
*Umbilicaria muhlenbergii* (Acharius) Tuckerman  
*Umbilicaria proboscidea* (L.) Schrader  
*Umbilicaria torrefacta* (Lightfoot) Schrader (Llano, 1950)  
*Umbilicaria virginis* Schaerer (mapped by Brodo et al., 2001)  
*Usnea amblyoclada* (Müll. Arg.) Zahlbruckner  
*Usnea cavernosa* Tuckerman  
*Usnea ceratina* Acharius  
*Usnea dasaea* Stirton  
*Usnea filipendula* Stirton  
*Usnea hesperina* Motyka  
*Usnea hirta* (L.) F. H. Wiggers  
*Usnea lapponica* Vainio s. lat.  
*Usnea longissima* Acharius  
*Usnea mutabilis* Stirton  
*Usnea pensylvanica* Motyka  
*Usnea strigosa* (Acharius) A. Eaton  
*Usnea subfloridana* Stirton  
*Usnea subfuscata* Stirton  
*Usnea subscabrosa* Motyka  
*Usnea trichodea* Acharius  
*Verrucaria baldensis* A. Massalongo  
*Verrucaria calciseda* DC.  
*Verrucaria calkinsiana* Servít  
*Verrucaria compacta* (A. Massalongo) Jatta  
*Verrucaria halizoa* Leighton  
*Verrucaria hydrela* Acharius  
*Verrucaria latebrosa* Körber ?  
*Verrucaria margacea* (Wahlenberg) Wahlenb.  
*Verrucaria muralis* Acharius  
*Verrucaria nigrescens* Persoon  
\**Verrucaria silicicola* J. Hedrick  
*Vezdaea leprosa* (P. James) Vězda  
*Vulpicida pinastri* (Scopoli) J.-E. Mattson & M. J. Lai  
*Vulpicida viridis* (Halsey) J.-E. Mattson & M. J. Lai  
*Xanthoparmelia angustiphylla* (Gyelnik) Hale  
*Xanthoparmelia conspersa* (Acharius) Hale  
*Xanthoparmelia cumberlandia* (Gyelnik) Hale  
*Xanthoparmelia dierythra* (Hale) Hale  
*Xanthoparmelia plittii* (Gyelnik) Hale  
*Xanthoparmelia somloensis* (Gyelnik) Hale  
*Xanthoparmelia subramigera* (Gyelnik) Hale  
*Xanthoparmelia tasmanica* (Hooker f. & Taylor) Hale  
*Xanthoria elegans* (Link) Th. Fries  
*Xanthoria fallax* (Hepp) Arnold  
*Xanthoria fulva* (Hoffmann) Poelt & Petuschnig  
*Xanthoria hasseana* Räsänen  
*Xanthoria parietina* (L.) Th. Fries  
*Xanthoria soreciata* (Vainio) Poelt  
*Xanthoria ulophyllodes* Räsänen

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#### END NOTES

<sup>1</sup> *Myriospora immersa* (Fink ex J. Hedrick) R. C. Harris *comb. nov.*

*Acarospora immersa* Fink ex Hedrick, Mycologia, 26: 158. 1934. TYPE: "On limestone in open grassy pasture near Oxford, Ohio, collected by Bruce Fink, May 15, 1927." (MICH!, holotype).

*Myriospora immersa* is close to the generitype *M. heppi* Nägeli ex Hepp. The distinctions are discussed in Harris (1977). The asci are very different from those of *Acarospora*.

#### APPENDIX 1

Species described from New York not currently accepted.

- Lecanora fulva* Halsey = ?  
*Lecanora irregularis* Halsey = ?  
*Lecanora juglandina* Halsey = ?  
*Lecidea adirondackii* H. Magnusson = *Psilolechia clavulifera*  
*Lecidea albonigra* H. Magnusson = *L. virginicensis*  
*Lecidea caesiocoronata* Lowe = *L. olivascens*  
*Lecidea coccinea* Halsey = *Pyrrhospora russula*?  
*Lecidea granulata* Lowe = *Lecanora placidensis*  
*Lecidea soredifera* Lowe = *Porpidia crustulata*  
*Lecidea suberratica* = *Micarea erratica*  
*Lecidea versicolor* Halsey = ?  
*Lepraria zonata* Brodo = *Lepraria caesioalba*  
*Pyrenula enteroleuca* Halsey = *Conotrema urceolatum*?  
*Spiloma roseum* Halsey = ?

## APPENDIX 2

Macrolichens which seem rare and whose present day occurrence and distribution in New York requires confirmation.

E = probably extinct in New York (offered as a challenge to the enterprising collector to prove me wrong).

*Ahtiana aurescens*  
*Alectoria fallacina*  
*Anaptychia setifera* (E)  
*Anzia colpodes*  
*Bryoria implexa* (E)  
*Bryoria subcana*  
*Caloplaca cirrochroa*  
*Cladonia acuminata* s. lat.  
*Cladonia beaumontii*  
*Cladonia caroliniana* s. str.  
*Cladonia didyma*  
*Cladonia dimorphoclada* (psoromic acid chemotype)  
*Cladonia glauca*  
*Cladonia macrophylla*  
*Cladonia pocillum*  
*Cladonia robbinsii*  
*Cladonia simulata*  
*Cladonia wainioi* (E)  
*Coccocarpia palmicola* (E)  
*Collema ryssoleum* (E)  
*Dirinaria frostii* (E)  
*Evernia prunastri* (E)  
*Fuscopannaria leucosticta*  
*Heterodermia echinata*  
*Heterodermia galactophylla*  
*Heterodermia leucomelos*  
*Heterodermia obscurata*  
*Heterodermia squamulosa* (E)  
*Hydrothyria venosa*  
*Hypogymnia vittata*  
*Hypotrachyna rockii*  
*Leptogium azureum* (E)  
*Leptogium chloromelum* (E)  
*Leptogium laceroides* (E)  
*Leptogium millegranum* (E)  
*Leptogium saturninum* (E)  
*Melanelia culbersonii*  
*Melanelia exasperata* (E)  
*Nephroma bellum*  
*Nephroma parile*  
*Pannaria lurida*  
*Parmelia neodiscordans*  
*Parmotrema arnoldii*  
*Parmotrema chinense*  
*Parmotrema margaritatum*  
*Parmotrema stuppeum*  
*Peltigera lepidophora*  
*Phaeophyscia endococcinodes*  
*Phaeophyscia erythrocardia*  
*Placidium tuckermanii* (E)  
*Protoparmelia pezizoides*  
*Pyxine subcinerea*  
*Ramalina denticulata*  
*Ramalina petrina*  
*Ramalina pollinaria*  
*Ramalina stenospora*

*Ramalina willeyi*  
*Solorina saccata*  
*Stereocaulon condensatum*  
*Stereocaulon dactylophyllum*  
*Stereocaulon paschale*  
*Stereocaulon subcoralloides*  
*Stereocaulon tennesseense*  
*Sticta beauvoisii*  
*Sticta fuliginosa* (E)  
*Sticta sylvatica* (E)  
*Teloschistes chrysophthalmus* (E)  
*Teloschistes flavicans*  
*Umbilicaria americana*  
*Usnea amblyoclada*  
*Usnea dasaea*  
*Usnea longissima*  
*Usnea trichodea* (E)  
*Vulpicida viridis*  
*Xanthoparmelia dierythra*  
*Xanthoparmelia subramigera*  
*Xanthoria fulva*  
*Xanthoria sorediata*

### APPENDIX 3

#### Arctic-Alpine Lichens

*Amygdalaria paneola*  
*Arctoparmelia centrifuga*  
*Arctoparmelia incurva*  
*Arctoparmelia subcentrifuga*  
*Arthrorrhaphis citrinella*  
*Cetraria ericetorum* ssp. *reticulata*  
*Cetraria laevigata*  
*Cetraria muricata*  
*Cetrariella delisei*  
*Cladonia amaurocraea*  
*Cladonia maxima*  
*Cladonia metacorallifera*  
*Cladonia sulphurina*  
*Cladonia wainioi*  
*Flavocetraria cucullata*  
*Flavocetraria nivalis*  
*Lecidea diapensiae*  
'*Lecidea*' – some species described by Lowe?  
*Lecidoma demissum*  
*Lichenomphalia hudsoniana*  
*Micarea crassipes*  
*Micarea leprosula*  
*Micarea lignaria*  
*Mycoblastus affinis*  
*Nephroma arcticum*  
*Ophioparma ventosa*  
*Orphniospora moriopsis*  
*Pilophorus cereolus*  
*Pilophorus fibula*  
*Porpidia cinereoatra*  
*Porpidia diversa*  
*Porpidia herteliana*  
*Porpidia tuberculosa*  
*Ropalospora lugubris*  
*Thamnolia vermicularis*  
*Umbilicaria hirsuta*  
*Umbilicaria hyperborea*  
*Umbilicaria proboscidea*  
*Umbilicaria torrefacta*

**APPENDIX 4**

New York lichens probably restricted to Long Island.

*Acarospora smaragdula*  
*Caloplaca camptidia*  
*Cladonia beaumontii*  
*Cladonia boryi*  
*Cladonia didyma*  
*Cladonia evansii*  
*Cladonia santensis*  
*Cladonia simulata*  
*Cladonia terraenovae*  
*Lecanora cupressii*  
*Lecanora louisianae*  
*Lecanora xylophila*  
*Micarea chlorosticta*  
*Pyrenula cruenta*  
*Ramalina denticulata*  
*Ramalina stenospora*  
*Ramalina willeyi*  
*Usnea trichodea*  
*Xanthoria fulva*



## *Placynthiella knudsenii* sp. nov., a New Lichen from Western North America

JAMES C. LENDEMER<sup>1</sup>

**ABSTRACT.** – *Placynthiella knudsenii* Lendemer, a new species from western North America is described. It differs from all previously described species in the genus by the combination of a fissured and wrinkled areolate thallus composed primarily of isidioid structures, proportionally larger spores, and the presence of two unknowns by TLC and lack of gyrophoric acid.

As discussed by Coppins & James (1984) the lichen family Trapeliaceae Hertel, includes a number of well known species complexes whose constituent taxa have long been poorly understood and confused. One such species complex, the “*Lecidea uliginosa*”-group was considered worthy of generic status by Coppins & James (1984) and consequently the genus *Placynthiella* Gyelnik was resurrected with *P. perfurfurea* (Nylander) Gyelnik (a synonym of *P. icmalea* (Acharius) Coppins & P. James) as its type. Later, Coppins et al. (1987) recognized that *Placynthiella* Elenkin was the correct name for *Placynthiella* Gyelnik, these authors also proceeded to place *Saccomorpha* Elenkin in synonymy with *Placynthiella* Elenkin.

Coppins & James (1984) recognized three other species in addition to *P. icmalea*, including *P. hyporhoda* (Fries) Coppins & P. James, *P. oligotropha* (Laundon) Coppins & P. James, and *P. uliginosa* (Schrader) Coppins & P. James. Later, Tønsberg (1992) recognized an additional species, *P. dasaea* (Stirton) Tønsberg as distinct from *P. icmalea*. Thus, at present the genus *Placynthiella* consists of a total of five species, all of which have been reported for North America.

During preliminary work on a revision of the genus in North America several collections were sent to the author for examination. The specimens appeared to represent an undescribed taxon similar to *P. oligotropha*. This view was confirmed when an isotype of *P. oligotropha* (at NY) was compared to the Californian material which is here described as *Placynthiella knudsenii* Lendemer.

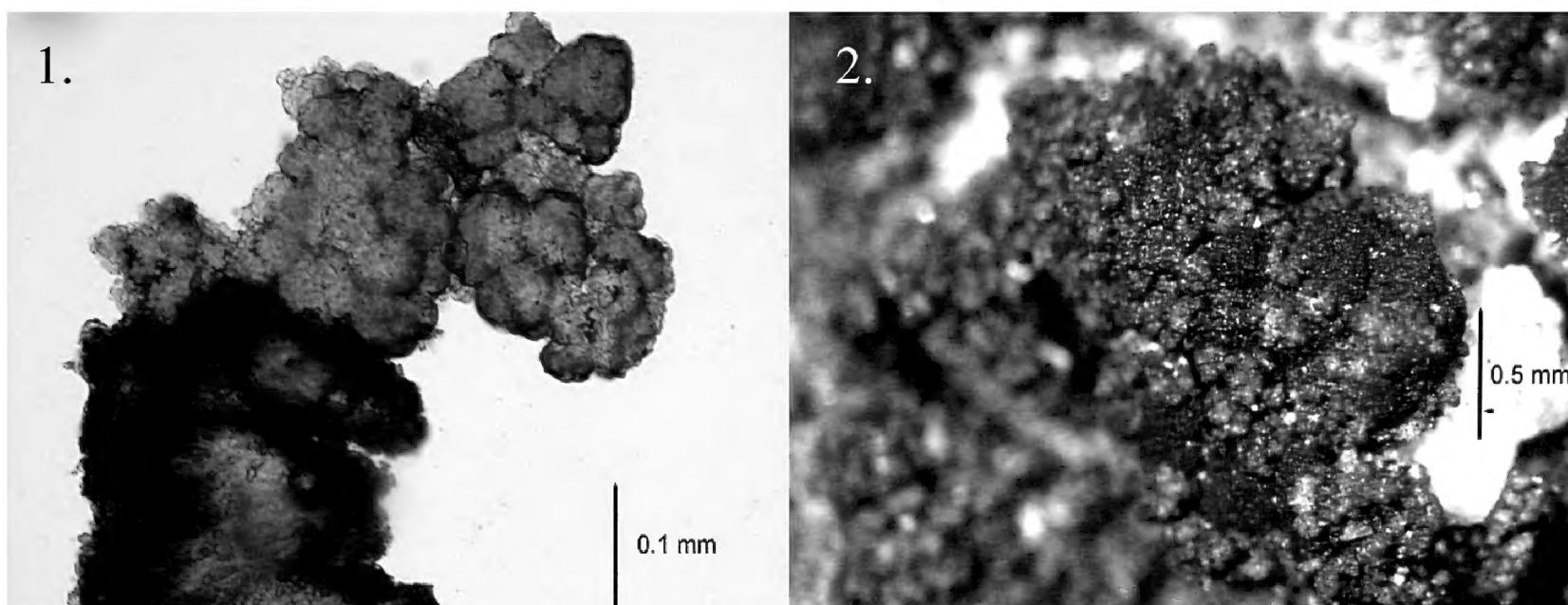
### **PLACYNTHIELLA KNUDSENI** Lendemer *spec. nov.*

Sicut *Placynthiella oligotropha* sed areolis fissuratis, rugosis, rumpentibus et isidia obtusa formantibus; apotheciis atris, immarginatis, epruinosis; ascosporae simplicibus, late ellipsoideae, hyalinae, 10-12-(14) $\mu$ m x 6-8 $\mu$ m.

**TYPE.** USA. CALIFORNIA. Riverside Co., on soil over granite boulders, north side of hilltop on granite-derived soil in mixed chaparral, Menifee Hills, Wildomar, elev. 567 m., 33° 37.310' N, 117° 14.274' W, 30.July.2003, K. Knudsen 389 (hb. Lendemer!, holotype; ASU, NY!, isotypes).

Thallus terricolous to saxicolous, areolate, dispersed to continuous, dark brown (not olive-gray), esorediate, isidia absent; areoles brown, with distinct margins at early stages of development, surface flat and quickly becoming wrinkled, fissured, and somewhat convex; with age margins of areoles becoming verruculose and eventually producing structures resembling small cylindrical to flattened isidia (up to ca. 140 $\mu$  tall), these structures overtake the surface of the areole as the cortex and eventually medulla break down giving the appearance of many small overlapping isidioid squamules. Apothecia common, rounded in outline when young, sessile; margins prominent, concolorous with disk, with age becoming flexuous and deformed, eventually excluded; disk becoming slightly convex (not hemispherical); exciple black, K-, C-, ca. 30 $\mu$ m wide; epihymenium brownish, K-, C-; hypothecium brown, K-, C-; hymenium brown to yellow-brown or red, pigment turning brown-gray in K and eventually dissolving, ca. 100 $\mu$ m tall, IKI+ blue; paraphyses slender, obtuse ellipsoid, often with oil droplets, colorless, 10-12-(14) $\mu$ m x 6-8 $\mu$ m; pycnidia not seen.

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Figures 1-2. *Placynthiella knudsenii*. Fig. 1. Detail of isidioid structure. Fig. 2. Thallus and apothecia.

**Chemistry.** – The type collection of *P. knudsenii* contains two unknowns by TLC (R.C. Harris, pers. comm.) and lacks gyrophoric acid. An isotype of *P. oligotropha* (NY) contains one of the same unknowns. TLC results of *P. oligotropha* that report gyrophoric acid likely are a result of contamination because even the type collection is an admixture with *P. icmalea* and *P. uliginosa*.

**Etymology.** – *Placynthiella kundsenii* is named in honor of Kerry Knudsen, the collector of the type and friend of the author.

**Ecology and distribution.** – At present *P. knudsenii* is known from several collections from southern California. It appears to prefer the compacted soil that overlays granitic boulders as a substrate, however, one collection was made directly on rock. The species is often associated with other soil crusts such as species of *Peltula*, *Psora*, and members of the Verrucariaceae.

**Discussion.** – *Placynthiella knudsenii* is superficially similar to *P. oligotropha*, a species of sandy acidic habitats in Europe. In fact, *P. knudsenii* was originally referred to *P. oligotropha* until the isotype of the latter was examined at NY. *P. oligotropha* (in the sense of the type collection) differs from *P. knudsenii* in a number of respects including proportionally smaller spores and the absence of an areolate thallus that breaks down into isidioid structures. All other species in the genus lack persistently areolate thalli and are instead composed of either soralia (*P. dasaea*), isidia (*P. icmalea*), or granules (*P. uliginosa*). It should be noted that the thallus of *P. oligotropha* was reported by Coppins & James (1984) as granular to verruculose, however this description is misleading, and the isotype clearly possesses a thallus composed of distinct brownish-tan areoles that in some instances appear lobed towards the margins. This type of thallus should be contrasted with that of *P. uliginosa* which is composed of small, nearly imperceptible granules. The author has not reviewed all collections previously referred to *P. oligotropha* from western North America, however, it seems likely that most specimens are in fact referable to other taxa. Populations in eastern North America that have also been referred to *P. oligotropha* may belong to another taxon, however, they are tentatively retained under *P. oligotropha* pending further study.

*P. knudsenii* could also be confused with *P. icmalea* which possesses a primarily isidiate thallus. The isidia of *P. icmalea* are however easily broken and much smaller than the isidioid structures of *P. knudsenii*. (The thallus of *P. icmalea* is also C+ red/pink.) The isidioid structures found in *P. knudsenii* lack a core of medullary tissue and instead contain only algae. Similar structures are also found in *Heppia conchiloba* Zahlbruckner, another terricolous lichen found in southern California. *H. conchiloba* does not occur with *P. knudsenii* and the two occupy different habitat types.

**Specimens Examined.** – USA. CALIFORNIA. Riverside Co.: Menifee Hills, Knudsen 389 (NY, hb. Lendemer). Elsinore Peak, Knudsen 435 (hb. Lendemer). San Diego Co.: Lakeside, Knudsen 454 (hb. Lendemer).

#### ACKNOWLEDGEMENTS

I wish to thank Kerry Knudsen for providing valuable discussion of this, and other species as well as for providing material from his herbarium for study. I also wish to thank Richard C. Harris for his discussions of *Placynthiella*, for his support in the field and herbarium, and for bringing an isotype of *P. oligotropha* to my attention. The following also

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Tønsberg, T. 1992. The sorediate and isidiate, corticolous, crustose lichens in Norway. Sommerfeltia, 14: 1-331.



# *Opuscula Philolichenum*

Volume No. 1, 2004

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## *Index of New Taxa Proposed in Vol. 1.*

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Taxon	Page
<i>Biatora longispora</i> (Degelius) Lendemer & Printzen <i>comb. nov.</i>	38
<i>Myriospora immersa</i> (Fink ex J. Hedrick) R.C. Harris <i>comb. nov.</i>	70
<i>Placidium lacinulatum</i> (Acharius) Breuss var. <i>atrans</i> Breuss var. <i>nov.</i>	54
<i>Placynthiella knudsenii</i> Lendemer <i>spec. nov.</i>	75